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Bid Number: BD-25-1367-1367C-1367L-120332

2026-JAII-01 AI Hub Consulting Service RFP

October 7, 2025

kpmg.com/us

Attachment A

Application Cover Sheet

<table>
<tr><td colspan="4">Name of Respondent: KPMG, LLP</td></tr>
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Rob Breakiron</td><td colspan="2">Primary Contact E-mail Address

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<tr><td colspan="2">Legal Status/Jurisdiction (e.g., a Massachusetts Corporation, LLC, LLP, etc.)

LLP</td><td colspan="2">Respondents W-9 Respondents UEI No.

13-5565207</td></tr>
</table>

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October 7, 2025

Sabrina Mansur
Massachusetts Technology Collaborative
75 North Drive
Westborough, MA 01581-3340

Dear Ms. Mansur,

On behalf of KPMG LLP (KPMG), we would like to present our response for the Artificial Intelligence (AI) Hub Data Commons Collaborative Consulting Services (BD-25-1367-1367C-1367L-120332) opportunity. KPMG is prepared to deliver across all eight service areas identified in the Request for Proposal and are ready to provide our services to support the design, development, and launch of the AI Hub Data Commons Collaborative (DCC).

We have a long and successful record of accomplishment working successfully with the Commonwealth: For more than 30 years, KPMG has worked with the Commonwealth of Massachusetts, providing professional services across various Secretariats, Departments, and Quasi-Public Agencies. We have a deep understanding of how the Commonwealth operates, particularly regarding the Commonwealth's unique technical environment. Our extensive work with the Executive Office of Technology Services and Security (EOTSS), specifically through ServiceNow solution enhancements, has afforded our team the knowledge and experience to navigate the intricacies that come with working on priority projects. Our extensive history of working with the Commonwealth, coupled with our experience in developing effective strategies and mitigating risks, makes us the ideal choice to support the Massachusetts Technology Collaborative (MassTech) and the Massachusetts AI Hub to implement the MassTech DCC platform. We understand MassTech's long term vision to execute the Data Commons Hub as a strategic digital transformation asset for MA, supporting not only equitable access to AI-ready data, but also enabling workforce development, startup acceleration, and public-sector innovation – the cornerstone of Quasi-government entities in the state.

We have the necessary knowledge and experience to collaborate with Mass Tech and build a solution you can trust: Using KPMG's successful project management and technical methodologies, we will guide MassTech in efforts to design, implement, integrate, and install a platform that optimizes and expands access to data most crucial to the Commonwealth. We have experience in leveraging a hybrid architecture model, utilizing Azure for portals, APIs, and data platforms, Databricks for computing and storage, and an integration of CKAN and Databricks Unity Catalog for metadata management. Additionally, the KPMG Trusted AI Framework is a mature, human-centric approach to the design and deployment of AI solutions. Built on the pillars of data integrity, security, and transparency, our team leverages the Trusted AI Framework to mitigate bias and strengthen fairness within AI solutions through documentation and dashboards.

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We bring established approach and methodology specifically tailored to your needs: We recognize that not every project is one-size-fits all. Recognizing MassTech's diverse needs, our team utilizes a flexible and iterative approach to implement and support the DCC solution. Using a three-phased approach, the delivery of incremental features reduces risk and enhances user-centric development, aligning closely with MassTech's objectives and helping ensure high-value delivery to the Massachusetts community.

We bring a purpose-built team who is prepared to support MassTech's AI Journey: Our dedicated team, Team KPMG, is fully aligned with the vision and prepared to support MassTech in the development of the DCC. Our strategic alliance with Databricks strengthens our core capabilities to deliver data, analytics, and AI solutions; enabling clients to modernize their data ecosystems, reduce costs, and accelerate regulatory compliance. Team KPMG prides ourselves on delivering meaningful and measurable outcomes. We believe in measuring the results from the process and technology changes, including equitable data accessibility, ethical AI development, and enhanced synthetic data generation, to quantify the impact of the solution to employees and stakeholders.

Our collective team is committed to serving the Commonwealth, and we are invested in your success. We believe our knowledge of the Commonwealth, coupled with domain-specific experience and national business insights, will bring success to the MassTech DCC Solution. KPMG looks forward to engaging MassTech to negotiate terms upon successful award of this opportunity. If you have any questions about our response or require additional information, please do not hesitate to contact me.
Very truly yours,

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Cindy Cohen
Account Executive
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cindycohen@kpmg.com

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Executive Summary/KPMG

KPMG overview

KPMG is the U.S. firm of the KPMG global organization of independent professional services firms. The KPMG global organization operates in 139 countries and territories and has more than 275,000 people around the world and 35,000 professionals and over 2,400 partners in the US. KPMG, which serves clients in all 50 states from more than 90 offices nationwide, traces our origin back to 1897 and has been a Delaware-registered limited liability partnership since 1994.

KPMG's presence in the Commonwealth of Massachusetts

In the Commonwealth, we employ 1,200 audit, tax, and advisory professionals. Since opening our Boston office in 1910, KPMG has a long-standing history of successfully working with the Commonwealth. Our experience serving the public sector is diverse and includes, in part, the following:

- Department of Health
- Department of Early Education and Care
- Massachusetts Housing Partnership
- Massachusetts Trial Court
- City of Cambridge
- University of Massachusetts
- UMass Building Authority
- UMass Foundation
- Massachusetts Department of Transportation
- Commonwealth Health Connector Authority
- Massachusetts Bay Transportation Authority Retirement Fund
- Massachusetts Port Authority Retirement System
- Massachusetts Pension Reserve Investment Management and Investment Trust
- Cannabis Control Commission

Our extensive experience with entities like the Executive Office of Technology Services and Security (EOTSS) uniquely positions us to partner with the Massachusetts Technology Collaborative (MassTech) to successfully design, develop, and launch the AI Hub Data Commons. Our proposal offers a comprehensive and forward-looking solution to build the DCC, a cornerstone of the Commonwealth's AI strategy. We understand the value in developing a foundational platform for agency, academic, and private sector collaboration around high-value data and AI Innovation. Our approach is designed to deliver immediate value through a Minimum Viable Product (MVP) while establishing a secure and ethically grounded platform for long-term innovation.

Building trust is paramount. Our proposal integrates KPMG's Trusted AI framework throughout the platform's lifecycle. We will implement a sophisticated AI Fairness and Bias Framework from the outset, embedding automated tools directly into our data pipelines for proactive bias detection, auditing, and mitigation. Furthermore, our approach to synthetic data is designed to unlock the value of sensitive information while upholding the strictest privacy and audit standards. KPMG will leverage its KAS Subcontractors, which enables us to tap into vast, highly specialized, talent pools to support project

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delivery. These resources will be supporting the following roles: Business Analyst, QA/Testing, Python/Databricks Engineer, and a Security/Cyber Engineer.

Our Alliance with Databricks

KPMG and Databricks have established a strategic alliance designed to offer cutting-edge data, analytics, and AI solutions through the Databricks Lakehouse Platform. This collaboration enables clients to modernize their data ecosystems, optimize costs, and expedite regulatory compliance—a crucial advantage in the financial services sector, where KPMG has spearheaded extensive implementations targeting regulatory reporting, risk analytics, and data governance. The alliance showcases several key capabilities and value propositions:

1. **Regulatory Reporting Modernization**: By leveraging Databricks' technology, KPMG streamlines regulatory data management processes, significantly reducing manual efforts by over 25% while enhancing data integrity and auditability. The solution offers automated reporting pipelines, anomaly detection, and compliance-integrated controls, helping ensure robust regulatory adherence.

2. **Accelerators and Methodologies**: KPMG's suite of Regulatory Business Solution Design and Lakehouse Accelerators facilitates the swift deployment of scalable data platforms. These accelerators provide comprehensive tools for data ingestion, transformation, validation, and lineage tracking, utilizing Delta Lake and Unity Catalog to help ensure data consistency and reliability.

3. **Migration Experience**: KPMG excels in executing complex migrations from legacy systems like Cloudera to the Databricks platform. This transition not only significantly reduces client costs, for example, from $5.1M to $2.1M—but it also enhances developer efficiency by leveraging automation and reusable frameworks.

4. **AI and ML Enablement**: The alliance supports an advanced analytics infrastructure that fosters machine learning use cases. This includes model lifecycle governance, feature store integration, and real-time data processing capabilities essential for effective risk profiling and forecasting.

5. **Client Successes**:
    - For S&P Global, KPMG delivered a multicloud data mesh architecture employing Databricks Delta Sharing and Unity Catalog.
    - A Global Sportswear Brand benefited from a marketing analytics platform aimed at boosting customer engagement.
    - An Electric Utility company deployed predictive analytics dashboards for real-time monitoring across 13 states.

The KPMG–Databricks alliance harnesses the strengths of both organizations to transform data landscapes for clients, particularly within the financial services industry, driving modernization, compliance, and intelligent business insights. Our collective team is committed to serving the Commonwealth, and we are invested in your success. We believe our deep knowledge of the Commonwealth, combined with our domain-specific experience and national business insights, will bring success to the MassTech DCC Solution.

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Approach

KPMG's proposed approach for implementing, launching, and supporting the MassTech's AI Data Hub Data Commons Collaborative solution draws on our extensive experience with similar data-driven projects. By applying lessons learned and leading practices, we aim to deliver an optimal solution for MassTech. Understanding that a one-size-fits-all approach is insufficient for meeting MassTech's diverse needs, we have developed a flexible and iterative implementation strategy. Recognizing the importance of developing a scalable and secured platform to centralize access to data for AI development, research, and innovation, our approach is backed by insights from our work with Massachusetts entities, where we have observed varying levels of experience and technological support. Our versatile team—comprising technologists, business analysts, Subject Matters Professionals (SMPs), and managers—can adapt to these unique needs, to help ensure our solution aligns MassTech DCC program requirements. Our technical solution is specifically designed to assist governments in managing data, offering flexible onboarding options without the burden of high per-user licensing costs.

Our 3-phased approach incrementally builds functionality and considers the distinct DCC requirements. From the outset, we will work closely with MassTech staff to define and design strategies that emphasize transparency and data utilization. Initially partnering with key stakeholders, we will tailor our approach to either interface existing data into the AI Data Hub Platform or fully leverage its comprehensive capabilities, providing the necessary resources for success.

KPMG proposes enhancing current systems and processes in collaboration with MassTech and agencies using a hybrid-agile methodology. This involves delivering incremental features and functionalities powered by Microsoft Azure, Databricks, and other Open-Source Platforms such as CKAN in three phases, each comprising multiple sprints. Our approach to iterative function release and capability building offers several benefits:

- **Reduction of Risk:** By gradually releasing product versions, we enhance visibility into product quality and build a solution poised to address future requirements.
- **Employee-Centric Development:** Through iterative sprints, we tailor the system to the specific needs and requirements of MassTech, prioritizing features with the greatest impact.
- **Customer-Focused Delivery:** We aim to empower users and deliver high value to the Massachusetts community by developing and releasing system functions based on prioritized customer requirements and journeys.

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1) Program Management & Coordination

RFP Scope of Services	• Develop and maintain an integrated project plan and timeline • Conduct regular meetings and stakeholder updates • Define and confirm milestones in the DCC project plan are met
Deliverables	• Deliverable 1: Detailed Project Plan and Timeline

KPMG's project management approach is designed to respond to the challenge of managing multiple, concurrent projects in a complex environment. We've successfully supported project management on many complex data-driven modernization projects using this approach. Based on our experience, we believe in integrating with a project governance framework, coupled with stakeholder management, communications, standardized processes and tools, and an integrated approach to project scheduling, are key to achieving a clear and simplified approach to project management. It also helps enable you to streamline decision-making processes and help ensure their alignment with your strategic goals.

Our **3PM (Portfolio, Program, and Project Management) method** provides the framework, methodology, tools, and templates to drive projects to successful completion for MassTech. These accelerators and standards are all based on our extensive experience, reviewed against the standards established by the Project Management Institute (PMI). More specifically, this PMP documents the objectives of our work and provides a management approach section describing the techniques and tools we will use to manage our work on the project, and confirms the deliverables, work products, timeframes, resources, and expected outcomes of our work. Because of our previous work with numerous public sector agencies, we know this approach is compatible with the current needs of DCC project and we will further tailor it to the evolving needs of this initiative.

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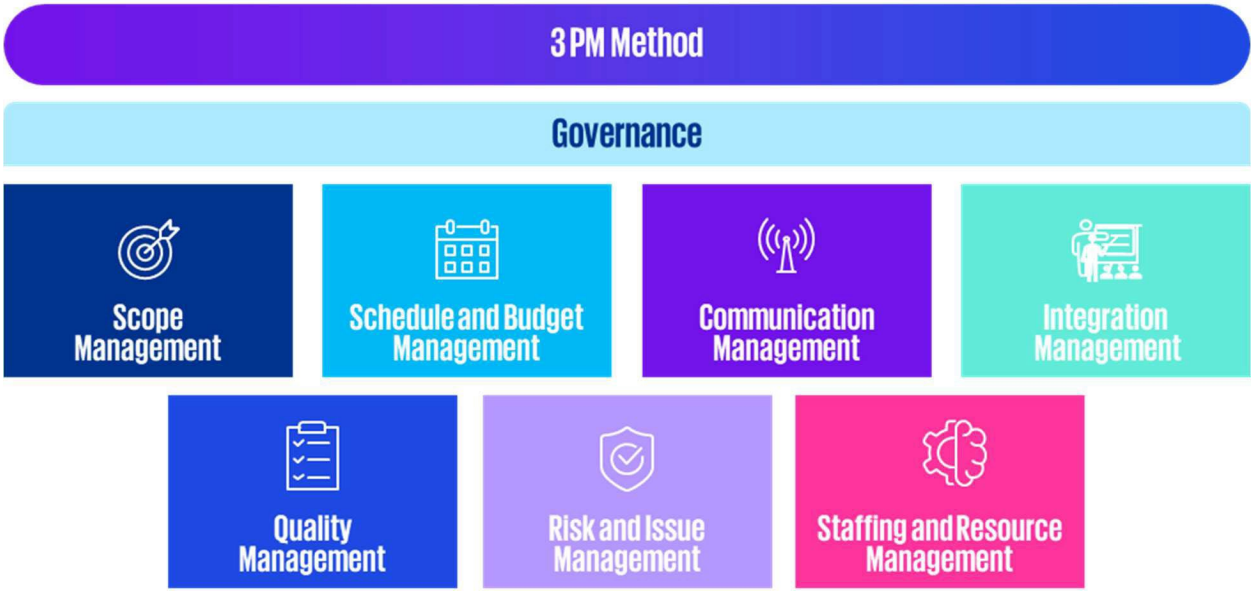

FIGURE 1: KPMG 3PM METHOD

As described in the above diagram, our project management approach emphasizes proactive communication, stakeholder engagement, and rigorous quality control. Key components of our approach include:

- **Scope Management:** We will clearly define, document, and control the project scope, helping ensure alignment with MassTech's goals and managing changes effectively. This includes a detailed work breakdown structure, change management processes, and impact analysis.
- **Schedule and Budget Management:** We will develop and maintain a realistic project schedule and budget, collaborating with MassTech to monitor progress and help ensure timely, on-budget completion.
- **Integration Management:** We will manage and coordinate multiple work streams, helping ensure seamless integration and communication between project activities. This includes clear team organization, regular communication, and robust work management processes.
- **Quality Management:** Our quality management plan focuses on delivering high-quality deliverables through a structured review process, quality checklists, and continuous improvement.
- **Staffing and Resource Management:** We will develop a staffing plan that aligns the right skill sets with project needs, helping ensure consistent delivery and knowledge transfer. Our core team, supplemented by specialized resources as needed, will drive project activities.

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- **Communications Management:** We will establish clear communication protocols, including regular status meetings, reports, and escalation procedures, helping ensure timely and transparent communication with all stakeholders, including the MassTech DCC Program Manager, relevant departments, and end-users.
- **Issue/Risk Management (aligned with SOW):** We recognize the importance of proactive issue and risk management and will work closely with the MassTech DCC Program Manager to implement the following process, as outlined in the SOW:
    - **Identify:** Proactively identify and document potential risks (future events that could impact the project) and issues (current problems impacting the project).
    - **Analyze and Prioritize:** Assess the potential impact of each identified risk and issue, prioritizing them based on likelihood and potential impact on project objectives (scope, time, budget).
    - **Plan and Schedule:** Develop mitigation strategies for high-priority risks and corrective action plans for identified issues. Assign responsibilities for risk management and issue resolution, and integrate these plans into the project schedule.
    - **Track and Report:** Continuously monitor the status of risks and issues, providing regular updates to the MassTech DCC Program Manager. We will adhere to the SOW's requirement to remediate reported issues within 48 hours of identification/reporting.
    - **Control:** Regularly review the effectiveness of risk mitigation and issue resolution actions, adapting strategies as needed. Active issues and risks will be monitored and reassessed on a weekly basis, or as agreed upon with the MassTech DCC Program Manager. This iterative approach will help ensure that risk and issue management remains proactive and responsive to the evolving project landscape. We will utilize a Risk and Issue Register to document, track, and manage risks and issues throughout the project lifecycle.

1.1 Develop and Maintain Integrated Project Plan and Timeline

Time is of the essence in modern system implementations and we understand the importance of a well-planned and well-executed project schedule. Our first priority will be to provide you with a project schedule and resource plan that aligns to your timeline, milestones and deliverable schedule. Our project schedule will outline deadlines for all tasks, milestones, and deliverables, helping enable us to allocate time and resources effectively. This results in better time management, planning, and execution throughout the project lifecycle. KPMG will manage the project plan utilizing Microsoft Project or Microsoft Excel, in alignment with the agreement made with MassTech.

The following components are essential to our project schedule and project plan:

- **Task dependencies:** We will establish task dependencies and highlight the relationship between tasks, revealing crucial connections and potential bottlenecks. By understanding these dependencies, we can better coordinate efforts and help reduce disruptions caused by delays or conflicts.

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- **Resource allocation:** With a clear project schedule, we can efficiently allocate resources. Identifying when and where resources are needed allows for efficient utilization, reducing the likelihood of resource conflicts and helping ensure timely completion of tasks.
- **Accountability:** An established project schedule provides the foundation for monitoring and assessing individual progress and performance. It assigns tasks to specific team members, promoting a sense of responsibility and ownership, ultimately driving accountability and commitment to the project's success.
- **Communication:** The project schedule facilitates effective communication with stakeholders, providing them with a clear overview of project timelines and milestones. This keeps them informed about the project's progress, reduces confusion, and fosters trust in the project team.
- **Risk management:** By identifying potential problem areas and delays, the project schedule helps enable us to proactively manage risks, develop contingency plans, and address issues before they escalate, helping reduce negative impacts on project deadlines and objectives.
- **Evaluation and control:** The project schedule also serves as a baseline for comparing planned progress with actual progress. This comparison allows project managers to identify deviations from the plan, evaluate performance, and take corrective actions when necessary, helping ensure a better alignment with the project's goals.

A carefully constructed project schedule is vital for maintaining control over the project's progress, promoting efficiency and accountability, improving communication and collaboration, and mitigating risks throughout the project lifecycle. It is a key instrument that supports project managers in achieving successful project outcomes while adhering to MassTech's time and resource constraints.

Proposed Phased-approach and Timeline

The DCC platform will be delivered through a structured, phased release approach over the course of 15 months and consisting of 3 phases. This timeline is designed to enable rapid deployment of core capabilities enabling early usability, followed by incremental enhancements and continuous stakeholder engagement. Each phase builds upon the previous, enabling early usability while supporting long-term scalability and governance. Each phase consists of Development, Testing & Governance, Rollout, Hypercare, Training and Knowledge Transfer, while Phase 1 also includes the program Initiation & Design and Infrastructure & Setup work.

1. **Phase 1 (Duration Month 1 to Month 6)** focuses on launching the minimum viable product (MVP), including the DCC Website, metadata catalog for external resorts and initial hosted curated datasets, the initial Common Credits system, and foundational infrastructure. KPMG will provide 1 month of hypercare at the end of Phase 1.

2. **Phase 2 (Duration Month 7 to Month 10)** introduces synthetic data integration, additional curated datasets and enhanced user experience, expanding the platform's capabilities and accessibility, and

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incorporating the feedback received on Phase 1. KPMG will provide 1 month of hypercare at the end of Phase 2.

3. **Phase 3 (Month 11 to Month 14)** delivers advanced features such as AI fairness dashboards, the enhanced Commons Credits system, and robust governance workflows and incorporating the feedback received on Phase 2. KPMG will provide 1 month of hypercare at the end of Phase 3.

The proposed high-level objectives and key milestones for each phase are listed in Table 1 and will be refined and reprioritized as needed in collaboration with MassTech during the discovery and design sessions.

TABLE 1: PROJECT PHASE OBJECTIVES & MILESTONES

Phase	Key Objectives	Key Milestones
Phase 1 (MVP)	▪ Lakehouse Foundation: Deploy Databricks and supporting Azure resources for Delta Lake architecture for scalable, governed data storage and processing. ▪ Unity Catalog RBAC/Tiering: Implement Unity Catalog for robust role-based access control, dataset tiering, and governance. ▪ Batch-First Pipelines: Build batch data ingestion pipelines and initial integrations for initial curated datasets, helping ensure reliable and auditable data onboarding. ▪ Leverage out-of-the-box Databricks capabilities such as Dataset Lineage, Version control, Workflows, Delta Live Tables, SQL Access, and Databricks REST API ▪ CKAN-Based Portal & Metadata Catalog: Launch a public-facing portal for dataset discovery, supporting metadata standards (DCAT, Schema.org, Dublin Core). ▪ Load external resource metadata into CKAN catalog as well as initial curated dataset metadata from Unity ▪ Admin Dashboard: Enable dataset management workflows for curators and administrators. ▪ Audit Trails & Logging: Implement comprehensive logging and audit trails for compliance and monitoring.	▪ Project kickoff and team alignment ▪ Detailed Architecture & Governance Defined ▪ Dataset Curation Criteria Approved ▪ Initial Dataset List Confirmed ▪ DCC Platform Infrastructure Provisioned ▪ Initial curated datasets onboarded via batch pipelines ▪ MVP UAT and go-live: Lakehouse, website, admin dashboard, common credits and metadata catalog go-live ▪ Pilot user Onboarding & Training

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Phase	Key Objectives	Key Milestones
Phase 2	▪ Expand Curated Datasets & Metadata Harvest: Onboard additional datasets and automate metadata harvesting from external sources. ▪ Expose governed APIs via APIM: Stand up Azure API Management to centrally manage and monitor all APIs ▪ Rigorous Quality Scoring & Automated Promotion: Introduce advanced data quality scoring and automated promotion of high-quality datasets. ▪ Synthetic Dataset Validation Outputs: Integrate synthetic data generation tools (SDV, Synthea, CARLA) and validation outputs for privacy and utility. ▪ Publish Delta Sharing Feeds: Publish additional Delta Sharing feeds for secure, scalable data sharing across organizations. ▪ UI Enhancements: Improve user interface with dataset previews (tabular, text, image, video), accessibility (WCAG 2.1), and multilingual support.	▪ Synthetic data generation and validation go-live ▪ Metadata Enrichment and semantic search deployment ▪ Expanded dataset onboarding ▪ Data Quality scoring and automated dataset promotion implemented ▪ Delta Sharing feeds published for external partners ▪ Enhanced UI and accessibility features released

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Phase	Key Objectives	Key Milestones
Phase 3	▪ AI Fairness Dashboards: Deploy dashboards for bias detection, auditing, and mitigation, integrating open-source tools (AIF360, Fairlearn, SHAP). ▪ Commons Credits System: Launch a centralized ledger for Commons Credits to incentivize contributions and manage resource allocation. ▪ Federated Modeling Patterns: Enable federated modeling workflows for secure, distributed AI development across institutions. ▪ Streaming Ingestion for Select Sources: Implement streaming data pipelines for real-time ingestion from priority sources. ▪ Advanced Cost/Usage Optimization: Integrate cost and usage optimization tools for efficient resource management. ▪ Cross-Institution Data Sharing Expansion: Scale data sharing capabilities to support collaboration across multiple organizations. ▪ Advanced Governance: Establish robust governance workflows, including consent management, compliance, and governance committee coordination. ▪ Reporting & Monitoring: Provide dashboards for usage analytics, fairness metrics, and audit logs, supporting both internal review and public transparency.	▪ AI fairness dashboards and bias mitigation tools go-live ▪ Commons Credits system enhancements ▪ Federated modeling and cross-institution data sharing enabled ▪ Streaming ingestion pipelines deployed for select sources ▪ Cost and usage optimization dashboards released ▪ Advanced governance and compliance workflows fully implemented

Proposed Timeline

The project timeline will be revisited and refined during the initial discovery and design session sas part of Phase 1 culminating in the Detailed Project Plan and Timeline deliverable. As part of this deliverable, an integrated project plan will be developed and maintained using a collaborative project management tool (such as Microsoft Project or Microsoft Excel) to track milestones, deliverables, dependencies and risks across all phases. KPMG will leverage DevOps tools, such as Microsoft Azure DevOps or GitHub, to effectively manage backlogs, sprints, and defects. Dependencies will be identified and managed, including infrastructure readiness, dataset availability, tool integration, and stakeholder approvals. Risk assessments and contingency plans will be included for each phase. Stakeholder feedback will be captured at each milestone through iterative reviews and signoffs, helping ensure alignment with requirements and priorities.

The Gantt chart shown in Figure 2 illustrates the proposed high-level timeline for each phase, highlighting the major activities and deliverables planned as part of the roadmap. Regular stakeholder meetings and

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pilot user feedback loops are integrated throughout the schedule to help ensure alignment with evolving requirements.

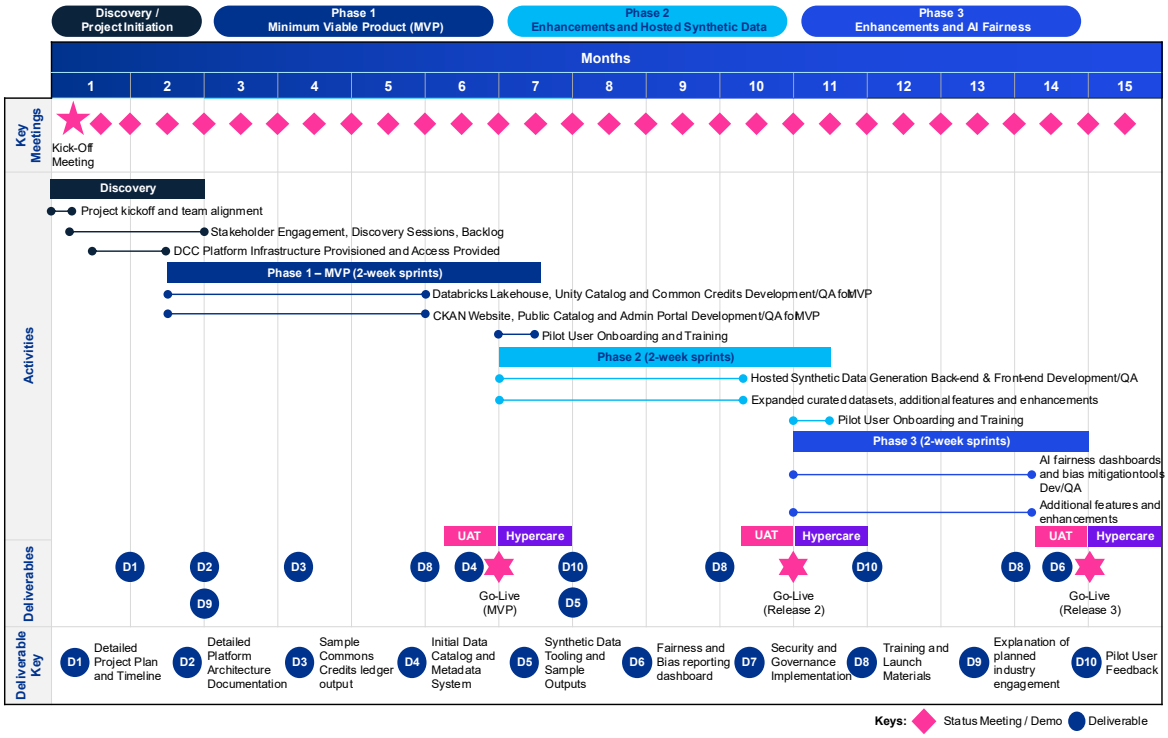
Discovery / Project Initiation
Phase 1 Minimum Viable Product (MVP)
Phase 2 Enhancements and Hosted Synthetic Data
Phase 3 Enhancements and AI Fairness
Months
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Key Meetings
Kick-Off Meeting
Activities
Discovery
Project kickoff and team alignment
Stakeholder Engagement, Discovery Sessions, Backlog
DCC Platform Infrastructure Provisioned and Access Provided
Phase 1 – MVP (2-week sprints)
Databricks Lakehouse, Unity Catalog and Common Credits Development/QA for MVP
CKAN Website, Public Catalog and Admin Portal Development/QA for MVP
Pilot User Onboarding and Training
Phase 2 (2-week sprints)
Hosted Synthetic Data Generation Back-end & Front-end Development/QA
Expanded curated datasets, additional features and enhancements
Pilot User Onboarding and Training
Phase 3 (2-week sprints)
AI fairness dashboards and bias mitigation tools Dev/QA
Additional features and enhancements
UAT Hypercare
UAT Hypercare
UAT Hypercare
Deliverables
D1 D2 D3 D8 D4 D10 D8 D10 D8 D6
D9 D5
Go-Live (MVP)
Go-Live (Release 2)
Go-Live (Release 3)
Deliverable Key
D1 Detailed Project Plan and Timeline
D2 Detailed Platform Architecture Documentation
D3 Sample Commons Credits ledger output
D4 Initial Data Catalog and Metadata System
D5 Synthetic Data Tooling and Sample Outputs
D6 Fairness and Bias reporting dashboard
D7 Security and Governance Implementation
D8 Training and Launch Materials
D9 Explanation of planned industry engagement
D10 Pilot User Feedback
Keys: Status Meeting / Demo Deliverable

FIGURE 2: PROJECT TIMELINE GANTT CHART

A hybrid between waterfall and agile methodologies is proposed where there is an entry criteria that must be met before entering into each phase, and then each phase operates in an agile fashion with 2-week sprints. Table 2 lists the entry criteria to be met before entering each phase.

TABLE 2: PHASE ENTRY CRITERIA

Phase	Entry Criteria
Phase 1 (MVP)	▪ DCC Platform Infrastructure Provisioned with Access Granted to Development Team for Dev and QA environments ▪ Development team provided with agreed upon development tools (i.e. DevOps/Jira/Git access, Laptops/Virtual Desktops (as needed), Visual Studio, etc.)
Phase 2	▪ Phase 1 passed all testing, approved for production deployment, and successfully deployed to Production

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Phase	Entry Criteria
Phase 3	▪ Phase 2 passed all testing, approved for production deployment, and successfully deployed to Production

1.2 Conduct regular meetings and stakeholder updates

Strong, effective communication is key to project success. The primary driver of effective communication is providing the right information, to the right stakeholders, at the right time. Our team will work collaboratively with you to develop and implement a Communications Management Plan to help us address the various types of communication, meetings, and engagement needs for the project. Our approach to managing communications is based on our extensive experience helping successfully orchestrate large, multi-program office and multi-stakeholder initiatives. We will leverage the leading practices from the Project Stakeholder Management and Project Communications Management Knowledge Areas of the PMBOK. Our Communications Management Plan will serve as a roadmap to address the various kinds of communication and engagement needs throughout the project SDLC.

To establish effective project communication, we will develop and implement a comprehensive Communications Management Plan. This plan will guide the flow of information throughout the project team and its stakeholders, addressing communications needs comprehensively.

- **Engagement Communications:** Initiate formal communication sessions starting with project kick-off, attended by key stakeholders to discuss the project scope, deliverables, assumptions, and deadlines.
- **Communications Strategy:** Develop an overarching strategy that incorporates stakeholder preferences and needs, helping ensure appropriate message delivery across stakeholder groups.
- **Decision-Making Facilitation:** Integrate communications management with project governance to support effective decision-making.
- **Meeting Schedule:** Establish a systematic schedule for all project meetings, assigning leaders, topics, and decision scopes to help ensure effective outcomes.
- **RACI Matrix:** Develop to help ensure responsibilities are clear across communication management processes.

KPMG will conduct regular meetings with MassTech identified stakeholders to provide stakeholder updates on the program. These meetings will be scheduled with at least five days' advance notice and may include the following types. The type and frequency of these meetings will be determined in collaboration with MassTech.

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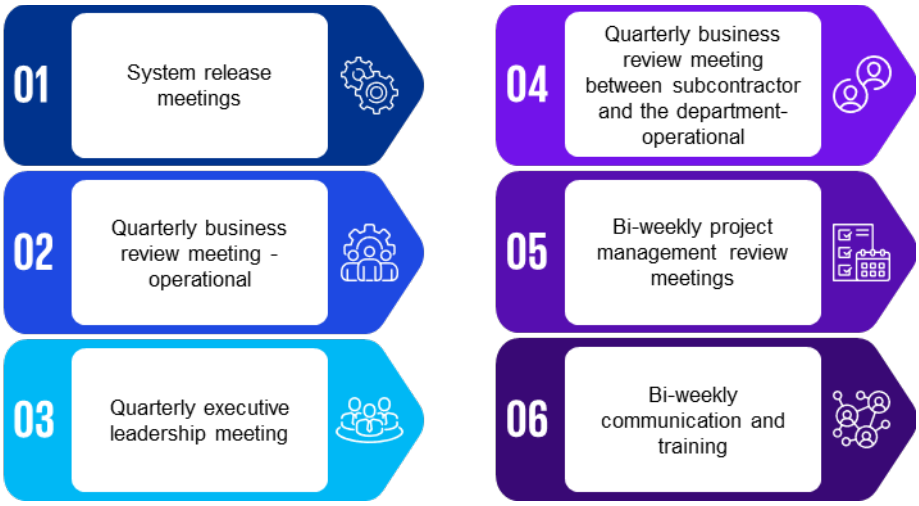

KPMG will facilitate the bi-weekly status meetings which will cover the following:

- Overview of project status.
- Detailed summary progress including project schedule, activities completed during previous status period, planned activities for the next status period, and overall deliverable progress.
- Summary of actions, challenges, and changes based on the Action Item Log, Risks and Issues Log, and Change Log.
- Identified recommendations to improve the execution of the project and quality of the solution.

Open and transparent communication is of the utmost importance to our team, and our status and progress reports will clearly identify any problems encountered or outstanding issues with an explanation of the cause and planned resolution.

1.3 Milestones defined in the DCC project plan are met

To help ensure the successful achievement of the milestones defined in the DCC project plan, our team places significant emphasis on robust risk and issue management, as well as structured change management and project milestone tracking processes.

Risk and Issue Management:

Proactively identifying, surfacing, and addressing risks and issues early is critical to the project's success. We will implement a structured approach to identify, assess, and mitigate potential risks and address issues in a timely and efficient manner. Our risk and issue management process consists of the following key components:

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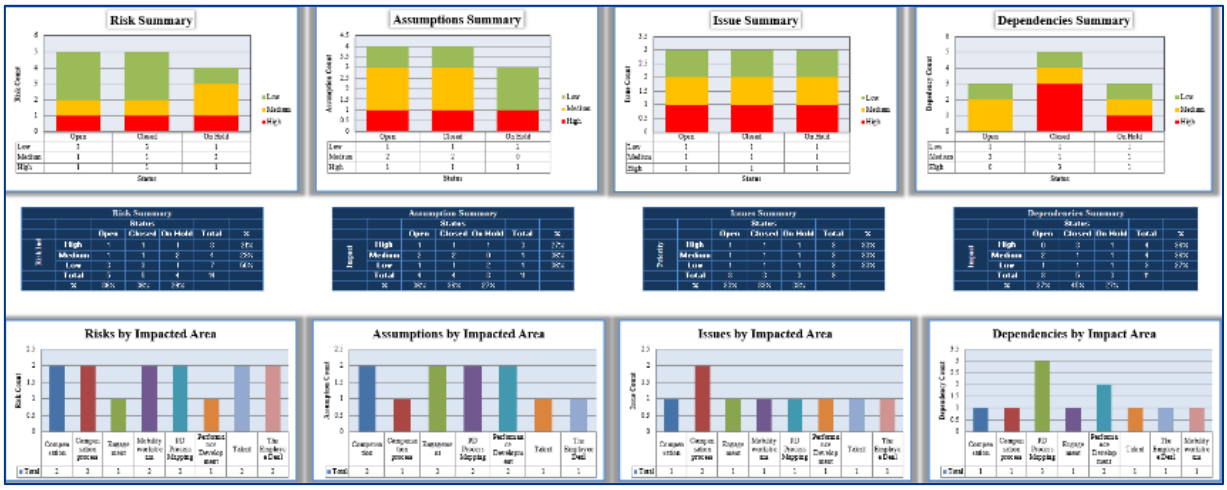

- **Risk Identification:** We will proactively engage with team members, stakeholders, and your subject matter professionals to identify potential risks and issues that may arise during the project. Drawing from our collective experience in projects of similar size and complexity and our close monitoring of the project, we aim to identify risks early.
- **Risk Assessment:** Each identified risk will be assessed based on its likelihood of occurrence, potential impact on the project, and the urgency of addressing it. We prioritize risks and issues by creating a risk matrix categorizing them as low, medium, or high priority.
- **Risk Response Planning:** For each prioritized risk and issue, we develop appropriate response strategies. These may include risk avoidance, mitigation, transfer, or acceptance, depending on the nature and potential impact of the risk. Issue resolution plans are formulated to effectively address existing concerns.
- **Risk Monitoring and Control:** Through regular project meetings and progress reviews, we continually monitor identified risks and issues, re-evaluating their likelihood and impact, and adjusting response strategies as required. We also track any newly surfaced risks and issues, incorporating them into our Risk and Issue Management process.
- **Communication and Escalation:** Clear communication channels are established to help ensure that risks and issues are transparently reported to relevant stakeholders and escalated to decision-makers when necessary. This enables informed decision-making and prompt responses to mitigate potential negative impacts on the project.
- **Documentation and Review:** All risk and issue management activities, including assessments, response plans, and related decisions, are documented and reviewed. Lessons learned are recorded and applied to future projects, enhancing our overall risk and issue management competency.

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By following this structured approach, we proactively address potential challenges, helping to reduce negative impacts and help to ensure the project's success through timely and collaborative mitigation of risks and issues.

Project Milestone Tracking:

We are committed to helping ensure that all defined milestones are met through a diligent project milestone tracking process:

- **Detailed Project Plan:** We will prepare a detailed project plan that includes all defined milestones with their respective timelines. This plan will serve as a roadmap and reference point, allowing for clear tracking of progress against established benchmarks.
- **Status Update Meetings:** Regular status update meetings will be scheduled to review project progress against the plan. During these meetings, we will assess the status of milestones, identify any deviations from the schedule, and discuss any corrective actions needed to get back on track.

Change Management:

To address requests made by MassTech effectively, we will institute a structured change management process designed to adapt to shifting requirements while maintaining control and reducing disruptions to project timelines and budgets. Our change management process consists of the following components:

- **Change Request Submission:** MassTech initiates the process by submitting a formal Change Request, detailing the proposed change, the reason for the change, assumptions, dependencies, and potential impacts to project scope, cost, timeline, and other relevant aspects.
- **Change Request Evaluation:** Our collective team thoroughly evaluates the submitted Change Request, considering feasibility, benefits, costs, risks, impacts on other project tasks or deliverables, and alignment with the project's overall objectives.
- **Stakeholder Communication:** Throughout the change management process, we maintain open communication with MassTech and other relevant stakeholders, discussing the proposed change, seeking feedback, and helping to ensure that all perspectives are considered.
- **Approval or Rejection:** Based on the evaluation, designated decision-makers, such as the DCC project lead or steering committee, either approve or reject the Change Request. If approved, necessary revisions to the project plan, budget, and schedule are made. In the case of rejection, a clear explanation is provided.
- **Implementation and Monitoring:** For approved Change Requests, our team incorporates the changes into the project scope and execution plan, reallocating resources, adjusting timelines, and updating project documentation as mutually agreed. Throughout implementation, we closely monitor the effects of the change on the project and maintain ongoing communication with the Department.

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By instituting a formal change management process, requests made by MassTech are effectively managed and integrated into the project. This process promotes flexibility, transparency, and a strong collaborative relationship while maintaining control over the project's scope, cost, and timeline.

Together, these frameworks for risk and issue management, project milestone tracking, and change management help to ensure that the project's milestones are achieved efficiently, addressing potential challenges and adapting to necessary changes without compromising overall project objectives.

1.4 Deliverables

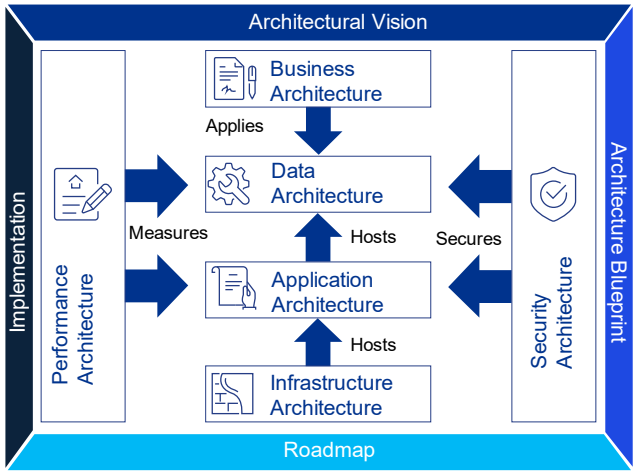
The KPMG team will prepare the following deliverable to outline all phases of the project, key milestones, roles, responsibilities, and timelines. This plan will serve as a roadmap to guide the project's development and execution, helping ensure all stakeholders are aligned and informed throughout the process.

- **Deliverable 1: Detailed Project Plan and Timeline**

2) Technical Architecture & Platform Development

RFP Scope of Services	• Design and build the data commons website and backend infrastructure • Implement metadata management, cataloging, and discovery tools (e.g., CKAN, Dataverse) • Develop role-based access and identity management system • Develop a central ledger for tracking "Commons Credits" • Enable API-based data access and usage analytics
Deliverables	• Deliverable 2: Detailed Platform Architecture Documentation • Deliverable 3: Sample Commons Credits ledger output

KPMG's strategy for defining the system and integration architecture adheres to **The Open Group Architecture Framework (TOGAF)** and **the Federal Enterprise Architecture Framework (FEAF)**. This approach strikes a harmonious balance between addressing business needs to support the design, development, and launch of the Data Commons Collaborative (DCC), a foundational initiative under the Massachusetts AI Hub and provide required security and data protection. A successful architecture for such a solution transcends isolated artifacts, necessitating a holistic approach that interconnects architectural domains. KPMG is committed to providing the



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necessary discipline, clarity, and coordination across various integration workstreams, agencies, and technologies, ultimately paving the way for the establishment of the proposed AI Hub DCC platform.

At the core, our proposed utilizes AI Hub DCC platform leverages Databricks and CKAN open source platform hosted on the **Microsoft Azure Commercial Cloud** within the existing MassTech's Azure tenant, providing a scalable, flexible, and reliable system.

Our methodology for implementing the Massachusetts AI Hub Data Commons Collaborative (DCC) is structured around a phased, modular architecture aligned with the reference architecture in Figure 3. We begin with foundational infrastructure and progressively integrate advanced capabilities including synthetic data generation, AI fairness, and federated access. Each phase is designed to deliver incremental value while maintaining compliance, scalability, and stakeholder engagement. The reference architecture and capabilities to be implemented in each phase would be finalized as part of the initial discovery sessions held as part of phase 1. This approach is informed by the governance and project management principles outlined in Section 5 and integrates cross-functional capabilities described in Sections 3 through 6 of the proposal.

The DCC implements hybrid architecture: the public portal, data platform and APIs are hosted in Azure, while MGHPCC/AICR provides a partner landing zone and optional compute for community submissions and user-generated synthetic data. Databricks provides the Lakehouse following a medallion architecture and provides both compute and storage. The final platform architecture would be finalized as part of the discovery sessions help in the beginning of phase 1 and documented as part of Deliverable 2.

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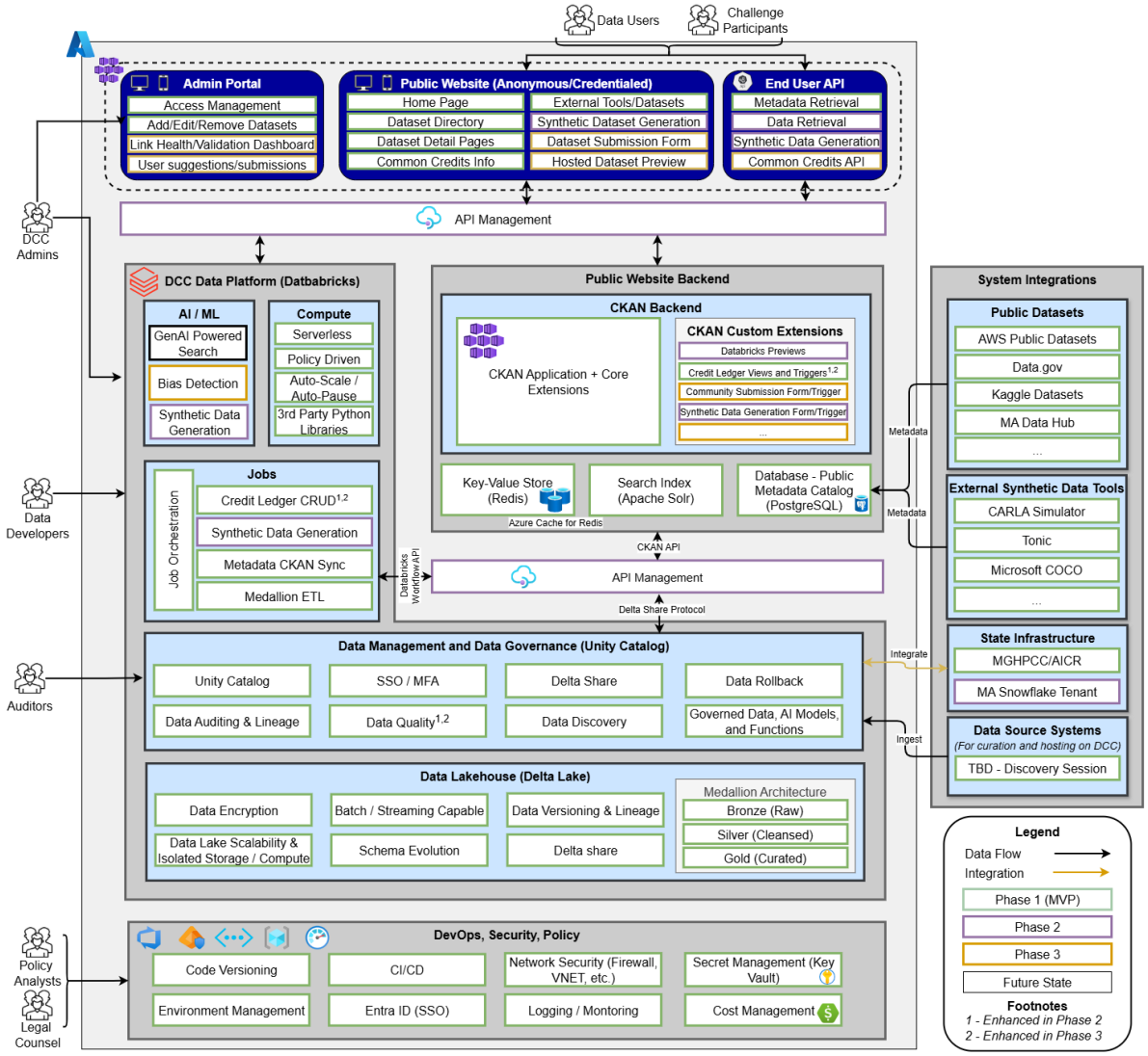

FIGURE 3: PROPOSED REFERENCE ARCHITECTURE

The proposed architecture for the MA AI Hub DCC is designed to meet the foundational requirements outlined in the RFP and attached Requirements document through a phased, modular implementation. The integration of Databricks Lakehouse Platform, Unity Catalog, CKAN, Azure API Management, and Delta Sharing helps ensures secure, scalable, and interoperable infrastructure for data curation (discussed more in the following section), metadata management, synthetic data generation (discussed more in section 4), and governed access (discussed more in section 6).

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2.1 Data Commons Backend Infrastructure / Data Platform

Our backend infrastructure leverages a hybrid architecture combining Databricks hosted on Azure with MGHPCC/AICR. Databricks provides both compute and storage for the curated Lakehouse and is the authoritative source of truth for hosted data on the DCC. It governs data via Unity Catalog, stores all curated versions in Delta Lake on ADLS Gen2, orchestrates ingestion/ELT, supports analytics and ML, and exposes secure APIs (via APIM) for programmatic access. MGHPCC/AICR is leveraged for compute of generated synthetic data and a landing zone for dataset submissions prior to approval and publishing to the Lakehouse.

During the discovery phase, MGHPCC/AICR will also be explored for any cost/performance optimizations for other use cases.

Key Services & Capabilities:

- **Storage & Tables:** The Databricks solution utilizes Azure Data Lake Storage Gen2 combined with Delta Lake. It implements a bronze/silver/gold architecture with support for time travel to enable historical data access and rollback.
- **Governance:** Unity Catalog is used to enforce role-based access control (RBAC), fine-grained permissions, data lineage tracking, tagging, and dataset tiering across Public, Registered, and Restricted classifications.
- **Orchestration:** Data pipelines are orchestrated using Workflows and Delta Live Tables supporting both batch and streaming workloads. These workflows can be scheduled, triggered by an event, or triggered via API calls and will execute PySpark notebooks that incorporate open-source libraries for tasks such as AI fairness and bias mitigation, synthetic data generation (if cloud-hosted), common credit transaction processing, and CKAN synchronization.
- **Data Quality:** The platform includes expectation checks, profiling, and quality scoring mechanisms. These scores are stored alongside metadata and used to enforce promotion gates to the gold layer.
- **Sharing & Federation:** Delta Sharing is configured as the publishing mechanism to enable interoperability with external partners. An optional on-premises Delta Sharing server may be deployed at MGHPCC/AICR to support localized data exchange.
- **Analytics:** Governed SQL access is provided through Databricks SQL endpoints. Semantic layers are implemented as needed to support business-friendly data consumption.
- **ML/AI:** The solution leverages MLflow and the Model Registry for lifecycle management. Hosted model inference is supported via Model Serving, and retrieval-augmented generation (RAG) is enabled through Vector Search. A Feature Store may be included to facilitate feature reuse across models.
- **MGHPCC/AICR Compute Options:** Synthetic data generation workloads may be executed either on MGHPCC/AICR infrastructure or within Databricks. The final deployment location will be determined

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based on data type, privacy and compliance requirements, and cost considerations during the discovery phase.

- **MGHPCC/AICR Storage Options:** Storage capabilities include an optional on-premises Delta Sharing server, bulk data transfer pipelines, secure artifact exchange mechanisms, and audit logging for traceability.

Phased Delivery (To be finalized as part of discovery sessions):

1. **Phase 1 (MVP):** Develop Lakehouse foundation in Databricks including Unity Catalog with RBAC/tiering, batch-first pipelines for initial curated datasets, and enabled out-of-the-box Databricks capabilities (i.e. dataset lineage, SQL access, version control, Databricks REST API Delta Live Tables and workflows, delta share); Configure CKAN backend services and load external resource metadata into CKAN catalog; Integration with MGHPCC/AICR and initial source systems for dataset curation established.

2. **Phase 2:** Expand curated datasets and external metadata harvest; expose governed APIs via APIM; develop workflows for hosted synthetic data generation and integrate synthetic dataset validation outputs; add quality scoring and automated dataset promotion; publish additional Delta Sharing feeds

3. **Phase 3:** Enable Federated modeling workflows; develop and integrate workflows for AI Fairness; develop streaming ingestion for select sources; apply advanced cost/usage optimization and cross-institution data sharing expansion.

2.2 Data Commons Website

The public website is built on CKAN deployed via Azure Kubernetes Service and leveraging Azure managed services such as Azure PostgreSQL and Azure Redis Cache. The website provides dataset cataloging, discovery, submissions, previews, and admin workflows. It catalogs both external/federated datasets and hosted/curated datasets through REST API synchronization with Unity Catalog.

Key Services & Capabilities:

- **Catalog & Discovery:** Dataset directory, detail pages, tagging, filters, previews, semantic search.
- **External Repositories & Tools:** Federated links to authoritative sources (e.g., state portals, public datasets), with provenance and licensing.
- **Hosted Datasets:** CKAN entries reference Unity Catalog governed tables/objects and provide download/API links via APIM.
- **Admin Dashboard:** Submissions review, metadata validation, curation workflows, and link health checks.

Phased Delivery:

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1. **Phase 1 (MVP):** CKAN portal live with curated + external dataset catalog, RBAC/tiering exposure, baseline semantic search.

2. **Phase 2:** Enhanced harvesters and metadata enrichment; expanded previews and usage analytics; APIM-published APIs; Synthetic Data Generation UI; UI Enhancements.

3. **Phase 3:** Public transparency extensions (e.g., high-level fairness indicators), advanced explorer features, and expanded federation connectors, community submission functionality.

2.3 Metadata Management, Cataloging, and Discovery Tools

Metadata management integrates CKAN and Unity Catalog to help ensure FAIR compliance and dataset discoverability. CKAN provides the catalog and metadata management for the public website while Unity Catalog manages technical metadata, lineage, and access tiers for hosted data. External datasets and tooling metadata management are added directly into the CKAN catalog while hosted data is added via REST API synch jobs between Unity and CKAN. CKAN Discovery is enhanced via faceted and semantic search capabilities.

Key Services and Capabilities:

- **Metadata Standards:** Supports FAIR principles through adoption of DCAT, Dublin Core, and Schema.org. Metadata includes descriptive, technical, and provenance fields
- **Unity Catalog Lineage and Tiering:** Provides unified governance across files, tables, ML models, and notebooks. Enables fine-grained RBAC, dataset tiering (public, restricted, internal), and audit trails. Lineage tracking includes both dataset-level and column-level granularity.
- **Search Capabilities:** CKAN supports faceted and semantic search across metadata fields. Unity Catalog enhances this with full-text search and tagging, enabling users to locate datasets by domain, source, format, and licensing.
- **Metadata Synchronization:** REST API-based synchronization between Unity Catalog and CKAN helps ensure hosted datasets are discoverable via the public portal. This includes automated updates to metadata fields, versioning, and access controls.

Phased Delivery:

1. **Phase 1 (MVP):** CKAN and Unity Catalog integration and automation, baseline metadata standards

2. **Phase 2:** Expanded search

3. **Phase 3:** Metadata enrichment, API access, evolving standards alignment

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2.4 Role-based Access (RBAC) and Identity Management System (IAM)

Role-based access control (RBAC) to manage access and permissions for users is handled through a combination of Entra ID and Unity Catalog for access to different resources and datasets. Single Sign-on (SSO) and Multi-factor Authentication (MFA) are supported for secure access. If necessary, we will define custom roles with specific access levels, restrict actions (e.g., data modification or deletion) to authorized users. More details about RBAC and IAM can be found in Section 6 (Security, Governance & Compliance).

2.5 Commons Credits Central Ledger

The Commons Credits system design will be finalized as part of the discovery sessions as part of phase 1 with two proposed options. The first option would be to host the common credits ledger in Databricks, leveraging Lakehouse tables and Databricks workflows. The second option is to use microservice on AKS with data stored in Azure DB for PostgreSQL. The decision on these options would be determined by latency requirements and number of transactions anticipated.

Both options will have API's exposed via APIM for issuance, spending, and reporting as well as transaction logs. Capabilities to add policies around credit issuance, limits and quotas will be available as well as usage reports. On the front-end, credentialed users will be able to view their credit balance and history and learn how they can earn/spend credits. The data catalog will maintain RBAC and approval workflows so that only users with appropriate permissions would be able to spend credits on secure resources. At launch the common credit system will operate as a closed-loop incentive-based system (no real currency) with future capabilities to include ability to buy credits.

Key Services and Capabilities:

- **Event Sources:** CKAN submissions/metadata enrichment; APIM usage (API calls/egress throttles); Databricks job/cluster metering (compute consumption).
- **Controls:** Governance rules for issuance limits, allowed spend categories (e.g., premium APIs, higher throughput), audit trails, and admin overrides.

Phased Delivery:

1. **Phase 1 (MVP):** Closed-loop append-only ledger with issuance/spend APIs; batch consumption reports; basic admin UI.
2. **Phase 2:** Deeper integration (compute-aware metering from Databricks and MGHPCC/AICR synthetic jobs); user dashboards; policy automation; APIM integration
3. **Phase 3:** Optional smart-contract adapter; Anomaly detection

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2.6 API-Based Access and Usage

API access is managed via Azure API Management (APIM), exposing secure endpoints for dataset queries, metadata retrieval, and Commons Credits operations. Rate limiting, token-based authentication, and usage analytics to help ensure scalable and governed access.

Key Services and Capabilities:

- **Azure API Management:** APIM serves as the gateway for all external access to DCC services, including dataset queries, metadata retrieval, and Commons Credits transactions. It enforces access policies, integrates with identity providers, and supports scalable routing to Databricks-hosted services and CKAN endpoints
- **Token-based Authentication:** API access is secured via token-based authentication, supporting OAuth2 and integration with SSO/MFA for sensitive datasets. Tokens are scoped to user roles and dataset tiers, aligning with Unity Catalog's RBAC model.
- **Usage analytics & reporting:** APIM logs all API interactions, enabling detailed usage analytics. These logs feed into dashboards that track dataset popularity, API throughput, and Commons Credits consumption. Integration with Databricks allows for real-time reporting and anomaly detection.
- **Rate limiting and quota enforcement:** APIM enforces rate limits and quotas per user, role, and endpoint. This helps ensure equitable access, prevents abuse, and supports the closed-loop Commons Credits system. Delta Sharing endpoints are governed similarly, enabling secure, throttled access to live datasets without duplication.

Phased Delivery:

1. **Phase 1 (MVP):** Governed APIs for curated datasets and metadata
2. **Phase 2:** Expanded APIs for synthetic data, search, and credits
3. **Phase 3:** Advanced analytics, external integrations, and performance optimization

2.7 Deliverables and Work Products

The following deliverables are planned in relation to Technical Architecture & Platform Development:

- **Deliverable 2 – Detailed Platform Architecture Documentation:** This deliverable will provide detailed documentation of the overall solution hybrid architecture, including:
    - Environment and deployment strategy and architecture
    - Logical and Physical Architecture Diagrams of the Lakehouse, CKAN Portal, and API Gateway
    - Component-level descriptions
    - Data flows and integration architecture

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- **Deliverable 3 – Sample Common Credits Ledger Output:** This will be delivered as sample outputs from and data model from the common credit ledger design, including:
    - Sample transaction log output
    - Sample data model to support ledger
    - Sample API request/response between systems

In addition to the above deliverables, the following additional work products will be produced to support the development of the AI Hub DCC:

- API Specifications and access control policies
- Metadata schema definitions and FAIR compliance mappings
- Synthetic data validation reports and lineage mappings
- Usage analytics dashboards for datasets, APIs, and common credits
- Role-based access matrices and consent management workflows

3) Dataset Curation and Integration

RFP Scope of Services	• Assist in curating the initial set of datasets • Drive metadata completeness and FAIR data principles • Support ingestion pipelines, version control, and provenance tagging
Deliverables	• Deliverable 4: Initial Data Catalog and Metadata System

Our approach to data curation and integration at KPMG prioritizes effective data quality management, technology and tool utilization, and rigorous testing to enhance the success of complex data migration efforts. We understand the key drivers for building and managing the AI Hub DCC Platform, including its systems and data models.

Using our Enterprise Data Quality (EDQ) methodology, we cover major processes such as pre-go-live testing and automated validation to help ensure accuracy and prevent data loss. This involves developing a data validation and test strategy that outlines the approach for integrating data into the AI Hub DCC

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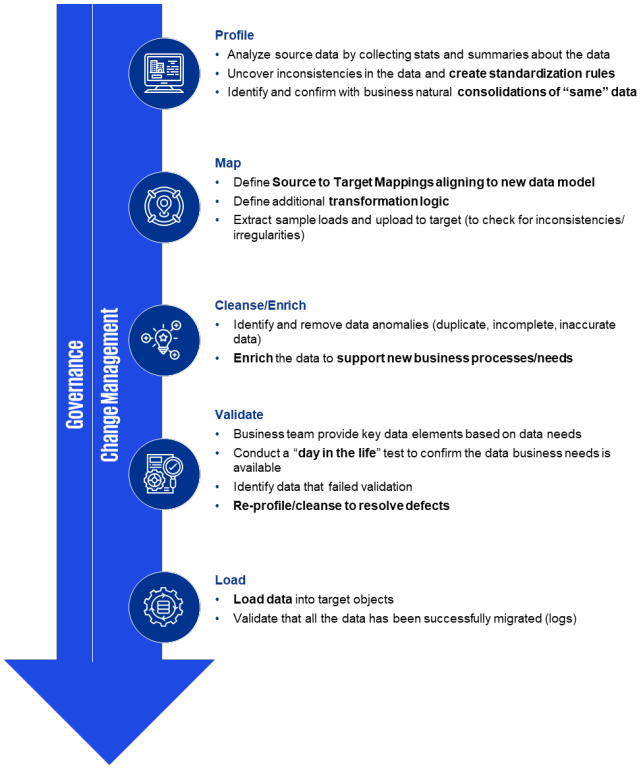
Platform. The strategy will address risks, mitigation plans, criteria for data extraction and integration, associated tools, overall testing governance, and the automation framework.

Our iterative methodology phases dataset curation, metadata management, and pipeline development—offering continuous improvement and enhancing stakeholder engagement.


Governance
Change Management
Profile
Analyze source data by collecting stats and summaries about the data
Uncover inconsistencies in the data and create standardization rules
Identify and confirm with business natural consolidations of "same" data
Map
Define Source to Target Mappings aligning to new data model
Define additional transformation logic
Extract sample loads and upload to target (to check for inconsistencies/ irregularities)
Cleanse/Enrich
Identify and remove data anomalies (duplicate, incomplete, inaccurate data)
Enrich the data to support new business processes/needs
Validate
Business team provide key data elements based on data needs
Conduct a "day in the life" test to confirm the data business needs is available
Identify data that failed validation
Re-profile/cleanse to resolve defects
Load
Load data into target objects
Validate that all the data has been successfully migrated (logs)

- **Dataset Curation:** Focuses on systematically organizing a diverse data collection, collaborating with clients to fine-tune dataset selections.
- **Metadata Management:** Integrates CKAN and Databricks Unity Catalog, helping ensure comprehensive metadata stewardship aligned with FAIR principles to improve data interoperability and discovery.
- **Pipeline Development:** Begins with batch processing using Databricks Medallion Architecture, progressing to real-time analytics with Databricks' Lakeflow Declarative Pipelines for agile data management.

3.1 Dataset Curation

Our aim in the initial data set is to curate a collection of datasets that vary in data subject, size, and columnar data types. This begins with an in-depth analysis to categorize datasets, forming the basis for selecting and combining potential initial datasets. We will facilitate client review sessions will then finalize these selections.

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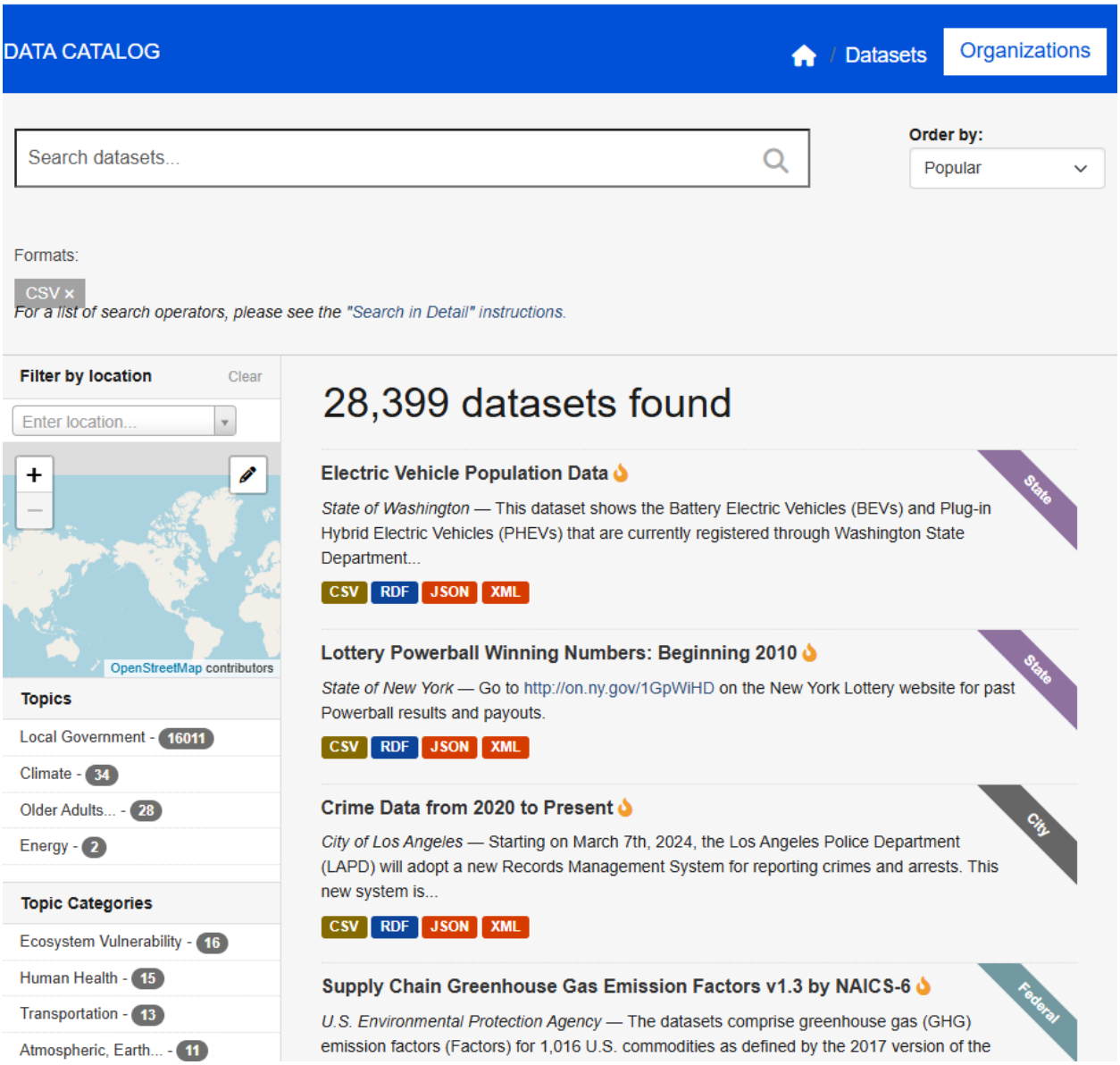
DATA CATALOG
Datasets
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Search datasets...
Order by:
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Formats:
CSV ×
For a list of search operators, please see the "Search in Detail" instructions.
Filter by location
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Enter location...
OpenStreetMap contributors
Topics
Local Government - 16011
Climate - 34
Older Adults... - 28
Energy - 2
Topic Categories
Ecosystem Vulnerability - 16
Human Health - 15
Transportation - 13
Atmospheric, Earth... - 11
28,399 datasets found
Electric Vehicle Population Data
State of Washington — This dataset shows the Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs) that are currently registered through Washington State Department...
CSV RDF JSON XML
State
Lottery Powerball Winning Numbers: Beginning 2010
State of New York — Go to http://on.ny.gov/1GpWiHD on the New York Lottery website for past Powerball results and payouts.
CSV RDF JSON XML
State
Crime Data from 2020 to Present
City of Los Angeles — Starting on March 7th, 2024, the Los Angeles Police Department (LAPD) will adopt a new Records Management System for reporting crimes and arrests. This new system is...
CSV RDF JSON XML
City
Supply Chain Greenhouse Gas Emission Factors v1.3 by NAICS-6
U.S. Environmental Protection Agency — The datasets comprise greenhouse gas (GHG) emission factors (Factors) for 1,016 U.S. commodities as defined by the 2017 version of the
Federal

FIGURE 4: SAMPLE DATA CATALOG IN CKAN

Core Components of the Initial Data Catalog:

- **Dataset Curation:** Develop a diverse collection categorized by subject matter, data size, and column types to represent a wide data landscape.

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- **Client Collaboration:** Conduct detailed review sessions to finalize dataset selections, helping ensure alignment with business objectives.
- **Batch Analysis:** Perform an initial analysis to categorize datasets and prepare them for the combination process.

Phased Delivery:

1. **Phase 1 (MVP):** Complete required dataset analysis and categorization, presenting initial options for client approval.
2. **Phase 2:** Broaden dataset combinations and metadata categorization; enhance the client review process to include diverse datasets.
3. **Phase 3:** Establish methodologies for ongoing dataset evaluations and integrate sustainable update workflows within the catalog.

3.2 Metadata Management Integration (CKAN and Databricks Unity Catalog)

By leveraging the capabilities of CKAN and Databricks Unity Catalog, our solution engenders a comprehensive metadata management that aligns with FAIR principles. Unity Catalog provides data lineage tracking to enable users to understand data origins rapidly, while CKAN handles both descriptive and technical metadata, including provenance data. Our setup will adhere to Dublin Core and DCAT standards, enhancing interoperability and dataset discovery capabilities through faceted and full-text search enhancements.

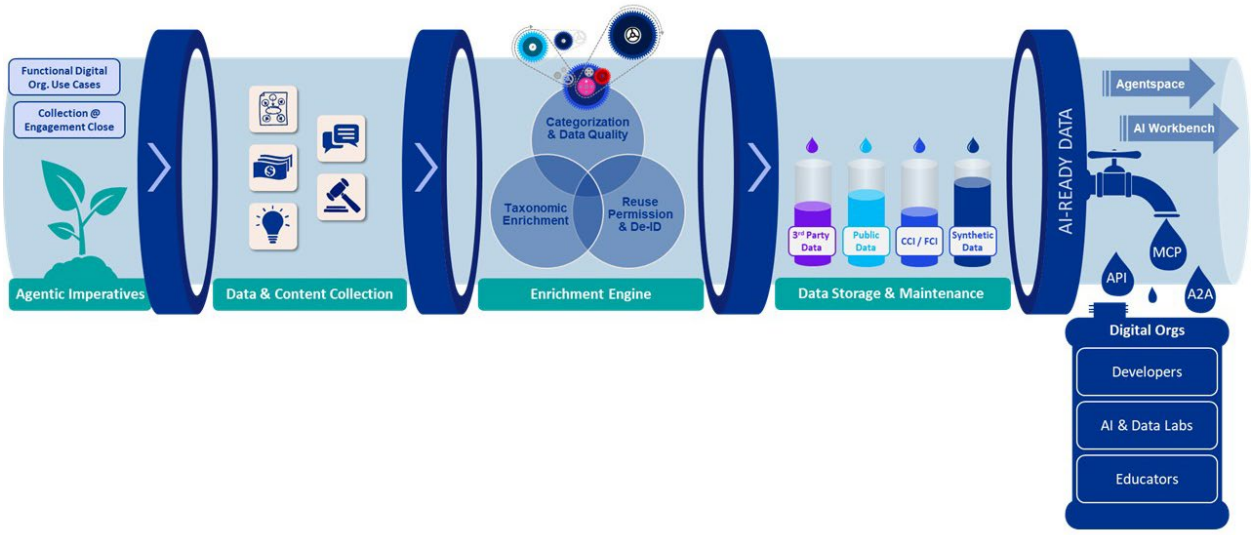

FIGURE 5: METADATA PIPELINE TO ENHANCE DATA USABILITY

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Integration Strategy:

- **Metadata Management:** Engages CKAN and Databricks Unity Catalog to provide FAIR-compliant metadata stewardship.
- **Standards Adherence:** Employs standards such as Dublin Core and DCAT to promote metadata consistency and interoperability across platforms.
- **Discovery Enhancements:** Incorporates faceted and full-text search functions to significantly improve dataset discovery and user experience.

Phased Delivery:

1. **Phase 1 (MVP):** Implement CKAN and Unity Catalog integration to establish a metadata management baseline that enhances interoperability.
2. **Phase 2:** Advance metadata automation and standardization; broaden search capabilities for user efficiency and experience improvement.
3. **Phase 3:** Further enrich metadata; optimize API capabilities to enable seamless programmatic access and integration.

3.3 Pipeline Development and Transition Strategy

Focusing initially on batch processing, our pipeline development establishes a roadmap for a shift to streaming, aligning closely with evolving business needs and cost constraints. By leveraging Databricks Medallion Architecture (as shown in the below diagram), we transform raw data into actionable insights. Utilizing Databricks' Lakeflow Declarative Pipelines, we delineate a clear transition from batch to real-time streaming, leveraging Kafka or Event Hubs as needed for efficient data ingestion, transformation, and deployment.

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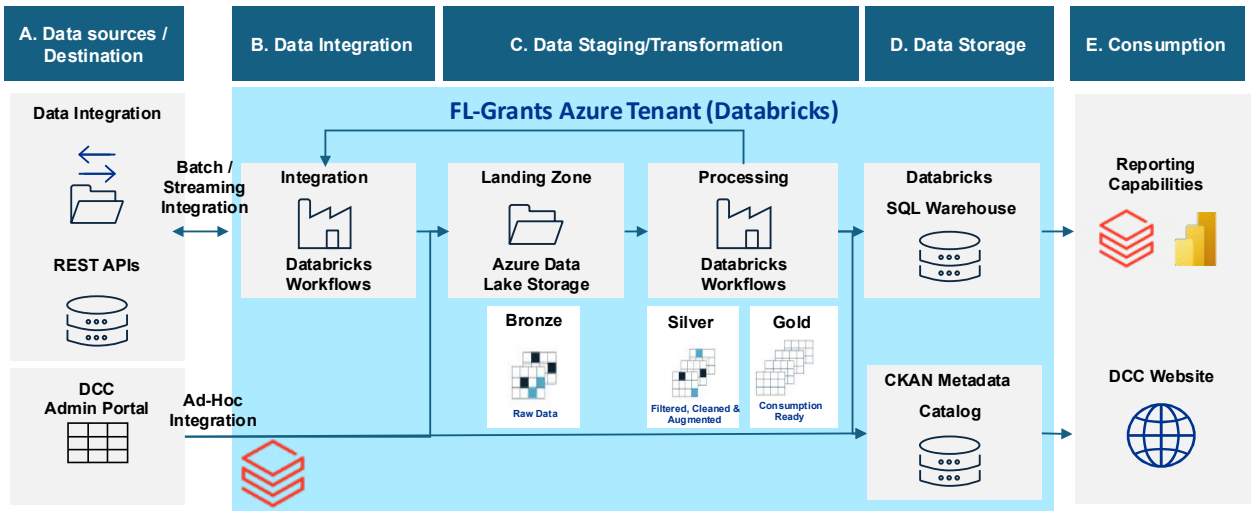

FIGURE 6: DATABRICKS MEDALLION ARCHITECTURE

Pipeline Development Strategy:

- **Batch-Focused Approach:** Initiate with a cost-effective batch processing strategy that sets a foundation for eventual transition to streaming.
- **Roadmap to Streaming:** Develop a comprehensive plan for transitioning to real-time streams in alignment with business growth and technological needs.
- **Integration with Databricks:** Implement Lakeflow Declarative Pipelines for an adaptable transition from batch to streaming capabilities.
- **Medallion Architecture:** Utilize the progressive capabilities of Databricks' Medallion Architecture to refine data quality through comprehensive data lifecycle management.

Phased Delivery:

1. **Phase 1 (MVP):** Build batch processing pipelines; establish a strategic roadmap to guide the transition to streaming.
2. **Phase 2:** Begin implementing event-driven data transformation; integrate initial real-time components into select scenarios.
3. **Phase 3:** Full transition to streaming as applicable; fully leverage the potential of real-time analytics for enhanced business intelligence and decision-making.

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The proposed approach is designed to deliver foundational capabilities while facilitating continuous enhancements across dataset curation, metadata management, and pipeline development.

3.4 Deliverables and Work Products

The proposed approach for the Data Catalog is designed to meet the foundational requirements outlined in the RFP and attached Requirements document through a phased, modular implementation. The following deliverable is planned in relation to the dataset curation and integration activities:

- **Deliverable 4: Initial Data Catalog and Metadata System:** This delivery will be delivered as the collection of datasets, and overarching metadata system to manage the data including:
    - Implementation of searchable, filterable data catalog with dataset publishing, versioning, and access control.
    - A metadata management system supporting FAIR principles.
    - Data pipelines to help ensure data is updated and ingested as it is made available.

In addition to the above deliverables, the following additional work products will be produced to support the development of the Data Catalog:

- Infrastructure as Code (IaC) and Python scripts to automate the deployment of all Azure resources, the Databricks environment, data pipelines and catalogs.
- A robust Azure and Databricks environment with access controls and necessary integrations/connections in place.

4) Synthetic Data Capability

RFP Scope of Services	• Integrate synthetic data tools (e.g., SDV, Synthea, CARLA) • Support synthetic dataset generation and validation pipelines • Drivecompliance with privacy and audit policies
Deliverables	• Deliverable 5: Synthetic Data Tooling and Sample Outputs

In today's data-driven environment, the generation and use of synthetic data play a critical role in AI and machine learning development, particularly when dealing with sensitive information. Recognizing this, the Massachusetts AI Hub Data Commons is committed to integrating cutting-edge synthetic data capabilities that align with privacy regulations while optimizing utility and scalability. Our approach leverages advanced tools and methodologies to help ensure that synthetic data generation is both compliant and effective, providing a robust environment for innovation and research. By utilizing platforms such as Databricks, we enable synthetic data integration across various data modalities and support diverse analytical needs. This initiative is designed to empower data scientists and researchers with the necessary tools to simulate real-world data conditions without compromising sensitive information. The

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following sections detail the strategic implementation of synthetic data tooling, generation capabilities, and compliance measures that underpin our comprehensive synthetic data strategy.

4.1 Integrate Synthetic Data Tooling on Databricks

Databricks offers a robust platform to enable synthetic data generation across various data modalities, including tabular, text, image, video, and audio datasets. This integration will support Deliverable 5, to meet the evolving demands of AI development.

Core Components:

- **Multimodal Data Support:** The integration will enable multiple synthetic data generation tools, allowing users to select the optimal generator for their needs. Tools within Databricks will allow the synthesis of image, video, and audio data, enabling flexibility across multiple data types for researchers and developers.
- **Scalable Integration and Execution:** By leveraging Databricks' scalable compute resources, synthetic data generation tools can be integrated and executed efficiently, providing high performance.
- **Data Auditability:** Each synthetic dataset will be accompanied by comprehensive metadata and provenance information, enabling traceability, auditability, and validation throughout the data life cycle.
- **Privacy-Utility Tradeoffs:** Configurable settings will allow users to optimize the balance between data privacy and utility using techniques like differentially private GANs, supporting tailored privacy compliance.
- **Validation Metrics:** A suite of validation metrics will be implemented to assess synthetic datasets, including statistical similarity, AI model training utility, and privacy metrics like k-anonymity, supporting an approach that balances accuracy, utility, and privacy.

Phased Delivery:

1. **Phase 1 (MVP):** Establish the foundational integration of synthetic data tools in Databricks, capable of supporting diverse data types such as tabular, text, image, video, and audio formats.
2. **Phase 2:** Develop a scalable execution framework within Databricks. Enhance the privacy-utility framework by integrating privacy-preserving techniques, empowering users to manage risks effectively.
3. **Phase 3:** Introduce advanced features such as parameter tuning, automated quality assessments, and a comprehensive validation framework, focusing on statistical, utility, and privacy metrics.

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4.2 Support Synthetic Data Generation Capabilities

Our approach leverages Databricks to create a flexible environment for generating and validating synthetic datasets, leveraging the advanced synthetic data generations tools described in section 4.1. This capability not only facilitates synthetic data pipelines but also provides sandbox environments for user interaction.

Core Components:

- **Synthetic Data Generation Pipelines:** Users can trigger data pipelines via the CKAN UI or API calls, specifying parameters for data generation, thus enabling tailored synthetic data creation for various applications.
- **Validation Pipelines:** Within Databricks, synthetic datasets undergo validation to help ensure statistical similarity, AI model training utility, and privacy guarantees such as k-anonymity.
- **Sandbox Environments:** Databricks sandboxes leverage scalable resources, allowing users to experiment with synthetic data securely and develop AI tools with insightful data interactions.

Phased Delivery:

1. **Phase 1 (MVP):** Establish initial synthetic data generation pipelines, integrate tools for diverse data modalities, and configure secure sandbox environments with foundational privacy-utility tradeoff settings.
2. **Phase 2:** Develop advanced privacy-preserving techniques, enhance audit trails, and integrate comprehensive validation metrics. Expand sandbox capabilities to support dynamic infrastructure scaling based on user demands.
3. **Phase 3:** Refine synthetic data generation through automated quality assessments and parameter tuning features. Implement a cohesive validation framework, engaging users in optimizing synthetic data for specific AI applications.

4.3 Help Ensure Compliance with Privacy and Audit policies

Our approach leverages Databricks to create a flexible environment for generating and validating synthetic datasets, leveraging the advanced synthetic data generations tools described in section 4.1. This capability not only facilitates synthetic data pipelines but also provides sandbox environments for user interaction.

Adhering strictly to privacy and audit policies is fundamental in managing both synthetic and source datasets. Solutions are designed not only to comply with privacy regulations but also to provide detailed audit trails for complete traceability.

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Core Components:

- **Audit Trail Infrastructure:** Utilize Unity Catalog's lineage capabilities to capture comprehensive dataset lineage, tracing changes from source to synthetic datasets. Delta Lake's version control assists withs historical data traceability and audits changes over time.

- **Privacy and Compliance:** Apply de-identification techniques during data generation to comply with GDPR and CCPA. Implement fine-grained access controls via Unity Catalog for authorized data access protection, helping ensure compliance with internal audit policies.

- **Audit and Reporting Tools:** Implement automated reporting tools to generate compliance reports, summarize data lineage, and log access and modifications. Utilize monitoring tools for real-time alerts on access and policy violations.

Phased Delivery Plan:

1. **Phase 1 (MVP):** Implement foundational infrastructure (ADLS+Delta) with Unity Catalog for initial access control and dataset tiering. Set up basic logging for access events and dataset modifications, creating an early audit trail.

2. **Phase 2:** Expand logging capabilities to include detailed data transformation logs, enhancing traceability. Develop compliance methods by integrating automated checks into workflows to maintain adherence to privacy regulations.

3. **Phase 3:** Implement improved monitoring and alerting systems for proactive policy enforcement and integrate user feedback to continuously improve audit processes.

4.4 Deliverables and Work Products

The proposed approach provides the commonwealth with a comprehensive suite of synthetic data generation capabilities, enabling users to have access to a multitude data types with AI development and testing purposes.

The following deliverable is planned in relation to the synthetic data tooling and compliance activities:

- **Deliverable 5: Synthetic Data Tooling and Sample Outputs:** This delivery will be delivered synthetic data generation pipelines, with the capabilities as outlined below:
    - Integration of synthetic data generation tools with the Databricks environment
    - Synthetic Data Generation pipelines, that enable users to generate data to meet their specific needs
    - Tooling enabled for logging and monitoring

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In addition to the above deliverables, the following additional work products will be produced to support the development of the Data Catalog:

- Infrastructure as Code (IaC) and Python scripts to automate the deployment of all data pipelines and catalogs
- A robust Azure and Databricks environment with access controls and necessary integrations/connections in place
- A robust framework for compliance with privacy and audit processes

5) AI Fairness and Bias Framework

RFP Scope of Services	• Implement bias detection, auditing, and mitigation tools (e.g., AIF360, Fairlearn) • Establish bias impact documentation workflows and dashboards
Deliverables	• Deliverable 6: Fairness and Bias Reporting Dashboard

At KPMG, we believe in the transformative power of AI, and we believe that it can only reach its full potential when it is paired with human experience and ingenuity. We are committed to upholding ethical standards for AI solutions that align with our Values and professional standards, and that foster the trust of our clients, people, communities, and regulators. We are steadfast in our commitment to act in a way that serves the public interest, honors public trust, and demonstrates our commitment to professional excellence.

KPMG Trusted AI framework is our strategic approach and framework to designing, building, deploying, and using AI solutions in a responsible and ethical manner so we can accelerate value with confidence.

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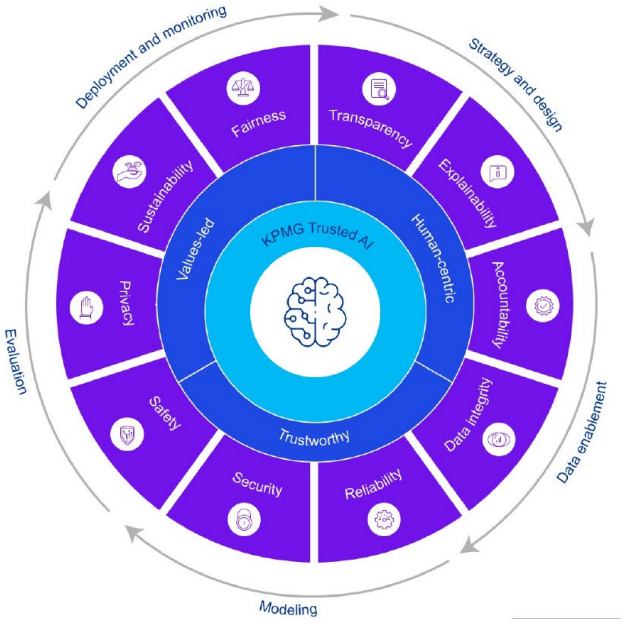

FIGURE 7 - KPMG TRUSTED AI FRAMEWORK

As part of the services that we will provide in creating the AI Data Hub, KPMG will leverage our Trusted AI framework to support us with the preparation, development and implementation of AI fairness and bias documentation and dashboards. Our approach will embody a values-led, human-centric, and trustworthy foundation:

- **Values-led:** Implement AI guided by Values that inform day-to-day behaviors and help us navigate emerging opportunities and challenges. We take a purpose-led approach that empowers positive change for our clients and communities.

- **Human-centric:** Prioritize human impact as we deploy AI and recognize the needs of our clients. We embrace AI to empower and augment human capabilities to unleash creativity and improve productivity.

- **Trustworthy:** We will adhere to the KPMG framework across the AI lifecycle and its 10 pillars (set out below) that guide how and why we use AI. We will align our data acquisition, governance, and usage practices to uphold ethical standards and comply with applicable privacy and data protection regulations and confidentiality arrangements.

Our Trusted AI approach builds on the ethical pillars set out below across the end-to-end AI lifecycle. Each pillar is a key part of designing, building and deploying AI responsibly that we will bring to bear in the creation of the AI Data Hub.

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KPMG Trusted AI Pillars:

Pillars	Description
Fairness	AI solutions should be designed to reduce or eliminate bias against individuals, communities, or groups.
Transparency	AI solutions should include responsible disclosure and be transparent as to what is happening in the solution based on the stage of the AI lifecycle.
Explainability	AI solutions should be developed and delivered in a way that answers the questions of how and why a conclusion was drawn from the solution.
Accountability	Human oversight and responsibility should be embedded across the AI lifecycle to manage risk and comply with applicable laws and regulations.
Data integrity	Data used in AI solutions should be acquired in compliance with applicable laws and regulations and assessed for accuracy, completeness, appropriateness, and quality to drive trusted decisions.
Reliability	AI solutions should consistently operate in accordance with their intended purpose and scope and at the desired level of precision.
Security	Robust and resilient practices should be implemented to safeguard AI solutions against bad actors and misinformation, or adverse events.
Safety	AI solutions should be designed and implemented to safeguard against harm to humans and/or property.
Privacy	AI solutions should be designed to comply with applicable privacy and data protection laws and regulations.
Sustainability	AI solutions should be designed to be energy efficient, reduce carbon emissions, and support a cleaner environment.

Building on these pillars, set out below are principles from the KPMG Trusted AI framework that help us to address the goal of helping validate that AI solutions reduce or eliminate bias against individuals, communities, and groups. We will use these principles to inform our implementation of specific tools and dashboards that can inform an overall picture of AI Fairness and Bias. The principles are grouped thematically, and each principle lists the source framework/reference documents that it is drawn from (and that our Trusted AI framework is built upon).

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Thematic Area	Principle Description	Source Framework(s)
Strategy and design	**Proactively assess for bias in design.** Consult with a diverse set of stakeholders, domain experts, and impacted communities to assess whether the solution is prone to sources of bias based on groups. Demographics may include, but are not limited to race, gender, disability status, age, and their intersections.	ENISA ISO-42001 NIST AI RMF AI Bill of Rights BSA Framework for AI Bias
Data enablement	**Examine data for bias.** Evaluate all data sources for potential historical and societal biases.	NIST AI RMF AI Bill of Rights BSA Framework for AI Bias
	Examine data for "representativeness." Compare distribution of data (training data, other data sources, etc.) to the population where the solution will be deployed and the population that will interact with the solution. Evaluate for data representativeness through techniques such as: investigating known failure modes, assessing data quality and diverse sourcing, applying public benchmarks, traditional bias testing, chaos engineering, and stakeholder feedback.	NIST AI RMF AI Bill of Rights BSA Framework for AI Bias
	Examine data labeling for bias. If using data labeling, define clear objectives and review the personal, process, and feedback mechanisms to help ensure sustainable, diverse, and accurate annotations. For third-party data, scrutinize data labeling (and associated methodologies) for potential sources of bias.	NIST AI RMF BSA Framework for AI Bias
	Rebalance unrepresentative data. Imbalanced data sets can potentially be rebalanced by "oversampling" data from underrepresented groups with additional sources such as synthetic data.	BSA Framework for AI Bias

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Thematic Area	Principle Description	Source Framework(s)
Model development	**Assess feature selection for bias.** Evaluate potential features for impact on bias and document rationale for feature selection. • Examine for biased proxy features. Examine correlation between a model's features and protected traits and examine what role these variables may be playing in the model's output. • Examine features that correlate to sensitive attributes. Features that are known to correlate to a sensitive attribute should only be used if there is a strong logical relationship to the system's target variable. • Seek feedback from diverse stakeholders and domain experts. The feature engineering process should be informed by personnel with diverse lived experience about the historical, legal, and social dimensions of the data being used to train the system.	NIST AI RMF AI Bill of Rights BSA Framework for AI Bias
	Assess model selection for bias. Document rationale for model selection and evaluation against established fairness goals and risk tolerance thresholds. Avoid unexplainable models in circumstances where the risk and potential impact of bias are high. Using more interpretable models can mitigate the risks of bias by making it easier to identify and solve problems.	NIST AI RMF BSA Framework for AI Bias
Evaluation and testing	**Test solution for bias.** Document validation process and testing techniques. Assess model performance including training data, algorithm, features against established fairness metrics, and thresholds.	NIST AI RMF AI Bill of Rights BSA Framework for AI Bias

5.1 Implement bias detection, auditing, and mitigation tools

As we build the AI Data Hub and based on our Trusted AI framework set out above, we will deploy and implement bias detection and mitigation tools integrate them directly into the platform. These tools may include

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- **AIF360**, a toolkit aiding in the detection, reporting and mitigation of bias across ML models.

- **Fairlearn**, a group of tools leveraged for the assessment and improvement of fairness in machine learning models

We will also implement machine learning methods like **SHAP (SHapley Additive exPlanation),** an implementation of Shapley values for interpreting model outputs and providing these to users of the Hub. KPMG will also work with MassTech to determine if other tools are suitable or preferable for these purposes as part of our work (for example, solutions like credo.ai, Arize, or Cranium). Whichever tool(s) is/are selected, KPMG will integrate these directly into the AI Data Hub and configure them to address the Commonwealth's needs relative to bias detection, AI auditing, and risk mitigations.

As part of the proposed scope, KPMG will implement up to two tools integration. Additional tools can be integrated as an additional scope based on the agreement received between MassTech and KPMG.

5.2 Establish bias impact documentation workflows and dashboards

Based on the bias detection tools implemented, KPMG will develop tailored integrations for these tools (or others, selected through consultation with key stakeholders) and develop dashboards to monitor and report on bias detection and mitigation results and helping to ensure the tools have been configured to meet your requirements for AI fairness and bias reduction. These dashboards will visualize bias metrics and findings, streamlining the review of these results, and will be accessible to both technical and non-technical users of the AI Data Hub. We'll also develop features that allow the results of the bias and fairness tracking to be monitored over time and develop exportable reports that enable the results to be taken offline for use in other processes like fairness audits and reviews.

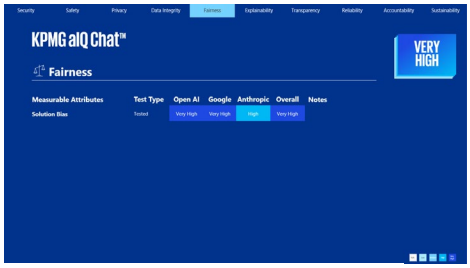

FIGURE 8 - EXAMPLE KPMG TRUSTED AI SCORECARD DASHBOARD

5.3 Deliverables and Work Products

Building on our Trusted AI framework and integrating it into the implementation of AI Fairness, bias detection, and audit tools, dashboards, and workflows, we will enable the Commonwealth's AI Data Hub to measure and monitor the impact of AI and drive robust governance, fairness, and trust in the results that it delivers.

The following deliverable will be provided for this phase of our work:

- **Deliverable 6: Fairness and Bias Monitoring Dashboard:** Our work for this phase will culminate in the creation, integration, and delivery of an AI Fairness and Monitoring Dashboard that will surface the metrics, findings, and summary statistics from the metrics and tools we will implement. This

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dashboard will facilitate easy stakeholder review of AI Fairness and Bias metrics in an easy to consume and understand (set of) view(s).

In addition to the above deliverables, the following additional work products will be produced to support the development of the AI Fairness and Bias Detection:

- Integrated AI Fairness and Bias detection tooling and accelerators.
- Documentation setting out the KPMG Trusted AI framework, aligned to the implemented tools and accelerators.

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6) Security, Governance & Compliance

RFP Scope of Services	• Define and implement RBAC, MFA, and dataset tiering • Help ensure logging, encryption, and audit trails • Define terms of use and enforce ethical data handling
Deliverables	• Deliverable 7: Security and Governance Implementation

While most competitors consider security an “add-on”, KPMG integrates our four-domain AI/ML Security Methodology into every phase of the deployment. Our methodology is structured around four key focus areas, Governance, Discovery & Classification, Protection, and Monitoring & Response, which will be applied directly to the proposed Azure and Databricks architecture.

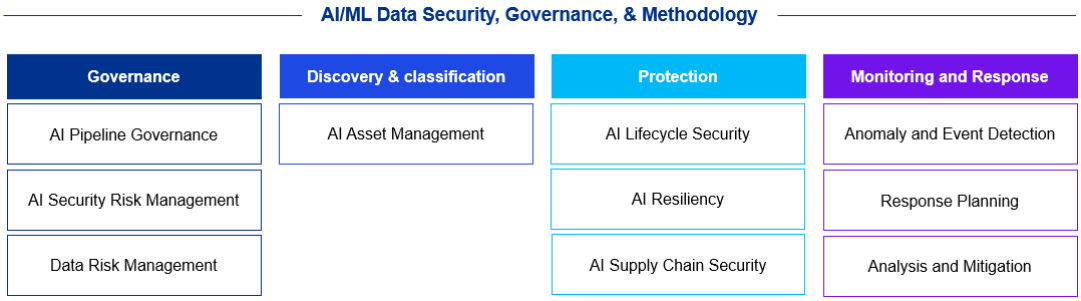

FIGURE 9 AI/ML DATA SECURITY, GOVERNANCE & METHODOLOGY

Our approach is uniquely effective because it is built upon our experience from the recent EOHHS Data Compliance initiative. This prior engagement provides us with direct, practical experience managing Massachusetts regulatory requirements for heavily regulated data and allows us to move beyond theoretical designs to an actionable, risk-informed implementation.

In addition to our experience, KPMG will leverage accelerators refined through recent work that will help us to more efficiently complete our objectives. These include our Technical Security Requirements Checklist, which is aligned to best practices such as the NIST AI RMF and addresses key threats like MITRE ATLAS, and our Unified AI/ML Security Architecture overlay, which allows us to efficiently map controls to the DCC architecture.

Accelerator Name and Description	Representative Screenshot

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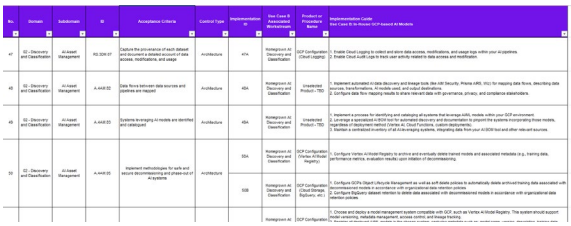
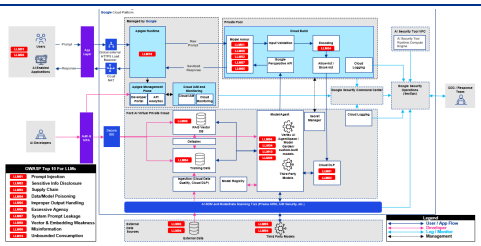
Technical Security Requirements Checklist KPMG will utilize our comprehensive checklist that is already aligned to best practices like the NIST AI RMF and addresses modern threats identified by MITRE ATLAS. This checklist provides a significant advantage over competitors because it goes ***beyond generic policy language by providing detailed, platform-specific technical implementation guidance, describing precisely "how" key security objectives are met.*** This allows us to rapidly tailor a library of proven controls to DCC's unique architecture and regulatory needs.	
AI/ML Security Architecture KPMG maintains a pre-built security generic architecture that overlays our security requirements onto key cloud and data platforms. This model visually **demonstrates "where" each security control is configured and enforced** across the technology stack. For the DCC project, this accelerator allows us to expedite the theoretical design stage and move directly to creating a customized architectural overlay for your specific environment.	

The detailed breakdown of our security considerations aligned to the implementation is provided below.

6.1 Define and implement RBAC, MFA, and dataset tiering

- Define application roles to manage Role-Based Access Control (RBAC) to the proposed solution model and data classification tiers (e.g., Public, Registered, Restricted) based on the MVP's user roles and initial datasets (Req. 13.0).
- Review the implementation of the RBAC model and dataset tiers within Databricks Unity Catalog to identify whether access policies enforce the Principle of Least Privilege (Q&A 15, 111, 235, 256).
- Assist with implementation and validation of Multi-Factor Authentication (MFA) for user accounts via integration with MassTech's existing MFA solution (Req. 13.0; Q&A 142).
- Refine application roles to align with RBAC policies and data tiering configurations for newly onboarded datasets to help ensure consistent and correct application of access controls.
- Review the technical implementation of the consent management workflow, confirming that access to restricted datasets is programmatically granted only upon capture of a valid, tokenized consent record.

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- Assist with validation of the consent revocation process, helping ensure that when consent is withdrawn or expires, access to the corresponding restricted dataset is immediately and automatically terminated.

6.2 Logging, encryption, and audit trails

- Validate the platform's encryption strategy is correctly implemented, confirming data is encrypted at rest (AES-256) and in transit (TLS 1.2+), with keys securely managed (Q&A 141, 331).
- Assist with comprehensive logging and audit trails by configuring log collection from all MVP components and establishing a log retention policy of at least three years (Q&A 17, 175, 293, 310).
- Advise the development team on response and logging capabilities to meet the 24-hour breach notification requirement (Q&A 368).
- Define clear Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO) (Q&A 319, 366).
- Proactively coordinate and manage the initial end-to-end penetration test to audit and validate the effectiveness of the platform's security controls (Q&A 140).
- Conduct a final security review, generating the necessary evidence from the platform's logging and access control systems to demonstrate alignment with HIPAA, GDPR, and other mandated standards.

6.3 Define terms of use and enforce ethical data handling

- Refine our technical security requirements checklist to align with the specific architecture for DCC and Massachusetts-specific regulatory considerations.
- Collaborate with MassTech stakeholders to define the security and data handling clauses for the initial Terms of Use to help ensure policies are technically enforceable (Q&A 129).
- Conduct an initial risk assessment to help ensure the MVP architecture aligns with core compliance standards like HIPAA and GDPR, forming the basis for ethical data handling (Q&A 112, 199, 257, 323).
- Validate the security controls and data anonymization techniques used within the new synthetic data generation pipelines for alignment with the platform's ethical data handling principles.
- Provide subject matter professional (SMP) guidance during workshops with MassTech stakeholders to define the detailed policy and technical requirements for the consent management workflow, specifying attributes for tokenization, lifecycle (time-bound), and revocation (Q&A 117, 118)

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7) Testing, Rollout, and Adoption

RFP Scope of Services	• Conduct QA across platform functions • Train end users and administrators • Prepare documentation and support materials • Support public launch
Deliverables	• Deliverable 8: Training and Launch Materials • Deliverable 9: Explanation of planned industry engagement • Deliverable 10: Pilot User Feedback

To implement the seamless deployment and operational excellence of the Massachusetts AI Hub Data Commons Collaborative (DCC), we present a proven approach that integrates thorough quality assurance (QA), effective training, detailed documentation, and strategic industry engagement. This approach helps to help ensure that the DCC platform meets stakeholder expectations and fosters wide-scale adoption.

Our robust quality assurance framework is embedded throughout the life cycle of our engagements and applies to the delivered solution, processes followed, modules and algorithms implemented, user experience, and attainment of favorable business outcomes. Clearly defined roles and responsibilities will be established to delineate who is responsible for the different types of testing. We have defined those responsibilities below.

- Unit Testing (KPMG)
- UAT (MassTech)
- Functional testing (KPMG)
- Performance Testing (KPMG)
- System Integration Testing (KPMG)
- Production Validation (KPMG and MassTech)

Since each phase concludes with a production deployment, each of the testing types will occur within each phase as we navigate through the environments from development to production, testing any new or enhanced features with each deployment.

7.1 Conduct QA across platform functions

KPMG's global footprint, diverse skillsets, and strategic alliances with leading technology providers position us to deliver high-quality testing services aligned with the Massachusetts AI Hub Data Commons Collaborative (DCC) initiative. Our testing approach is designed to meet the RFP's requirements for platform QA, performance validation, and governance assurance.

- **Industry-Aligned Testing Accelerators:** We bring proven testing accelerators developed through client engagements and our internal automation practice.
- **Proactive Product Management:** Our testing assets are continuously updated to reflect platform changes. We analyze release notes and early platform insights to prepare test cases in advance of deployment, helping ensure readiness for public launch.

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- **Flexible, Client-Centric Design:** Our testing frameworks are modular and adaptable, allowing us to tailor test coverage to the specific architecture and governance model of the DCC platform.
- **Quality Assurance for Complex Solutions:** We help ensure the delivery of a secure, scalable, and compliant data platform that meets the DCC's goals for ethical AI development, FAIR data principles, and extensible access for researchers, government, and industry.
- **Robust Test Governance:** Our Test Management Office (TMO) framework helps ensures consistent execution of test and defect remediation across the lifecycle. This includes coordination of functional, security, and governance testing as outlined in the RFP.
- **Early Performance Testing:** Given the scale and public-facing nature of the DCC platform, we emphasize early performance testing to validate non-functional requirements. This includes load testing of metadata search, synthetic data generation, and API-based data access

Unit Testing

KPMG will write and execute unit tests for each testable work item and help ensure the acceptance criteria are validated. Unit tests will include considerations that help to ensure that defect fixes and enhancements function as documented in the requirements. Unit test cases will be executed in the development environment and updated to show actual test results, through an ADO Unit Test Case and screen shot(s).

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Functional Testing

We will leverage our experience and system testing technology tailored to MassTech's needs.
We've created several accelerators that allow us to implement, deploy, test and report as quickly as possible. These accelerators can be adjusted to match your system and business requirements to create a tailor-made service that fits your process and requirements. Functional testing will validate that the application behaves as expected based on the requirements and acceptance criteria. This test encompasses the process of testing the application using scripts, tools, or test automation frameworks (seen to the right).

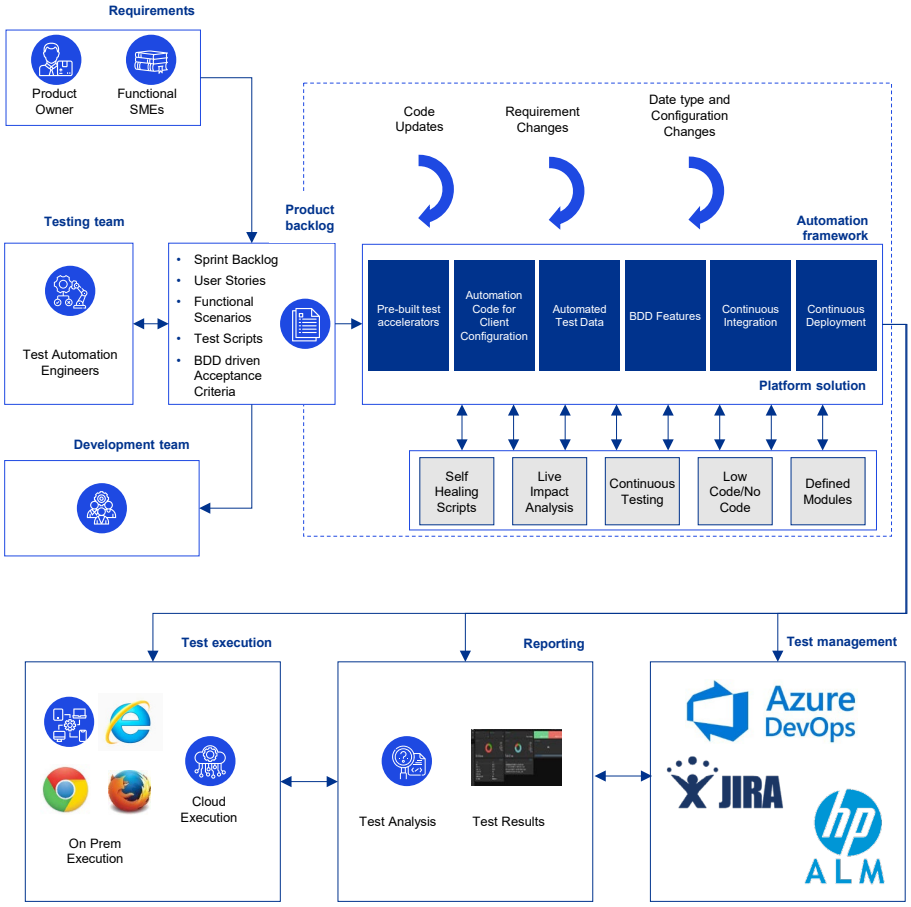

FIGURE 10: FUNCTIONAL TESTING FRAMEWORK

System Integration Testing (SIT)

We will execute neighbor testing with immediate upstream and downstream systems and both internal and external end-to-end testing which will:

- Thoroughly validate business intent in each functional domain (happy and path and alternate flows)
- Verify interface and data interactions with immediate upstream or downstream applications
- Help ensure the readiness of technology service to handle business volumes at agreed upon performance levels
- Incorporate custom objects tested as part of Unit Testing
- Verify the new solution works within the current infrastructure and environments
- Help ensure successful end-to-end integration of standard modules and custom development

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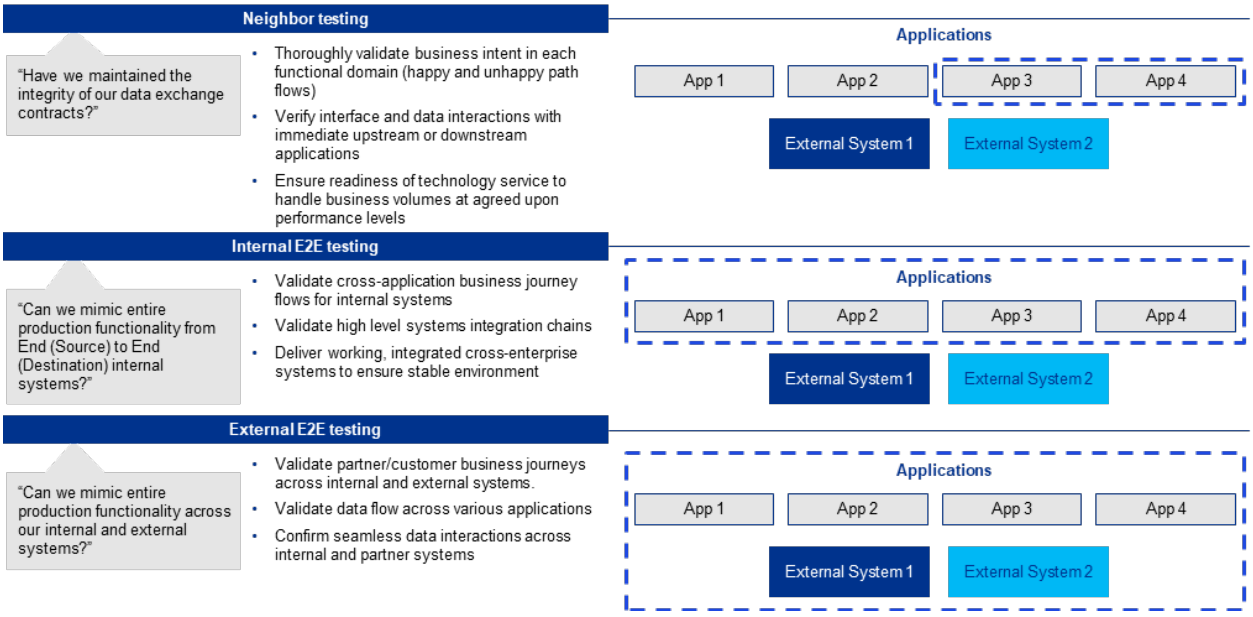
Neighbor testing
"Have we maintained the integrity of our data exchange contracts?"
Thoroughly validate business intent in each functional domain (happy and unhappy path flows)
Verify interface and data interactions with immediate upstream or downstream applications
Ensure readiness of technology service to handle business volumes at agreed upon performance levels
Applications
App 1
App 2
App 3
App 4
External System 1
External System 2
Internal E2E testing
"Can we mimic entire production functionality from End (Source) to End (Destination) internal systems?"
Validate cross-application business journey flows for internal systems
Validate high level systems integration chains
Deliver working, integrated cross-enterprise systems to ensure stable environment
Applications
App 1
App 2
App 3
App 4
External System 1
External System 2
External E2E testing
"Can we mimic entire production functionality across our internal and external systems?"
Validate partner/customer business journeys across internal and external systems.
Validate data flow across various applications
Confirm seamless data interactions across internal and partner systems
Applications
App 1
App 2
App 3
App 4
External System 1
External System 2

FIGURE 11: SYSTEM INTEGRATION TESTING FRAMEWORK

Performance Testing

- Load, stress, and endurance tests will be executed to simulate a large set of users performing day-to-day activities to identify any issues due to the high load on the system. Our Performance Test Automation Framework will be utilized to identify bottlenecks at early stages, improve the user experience and supports cross platforms.

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Performance Test Automation framework to identify bottlenecks at early stage, improve user experience and supports cross platforms.

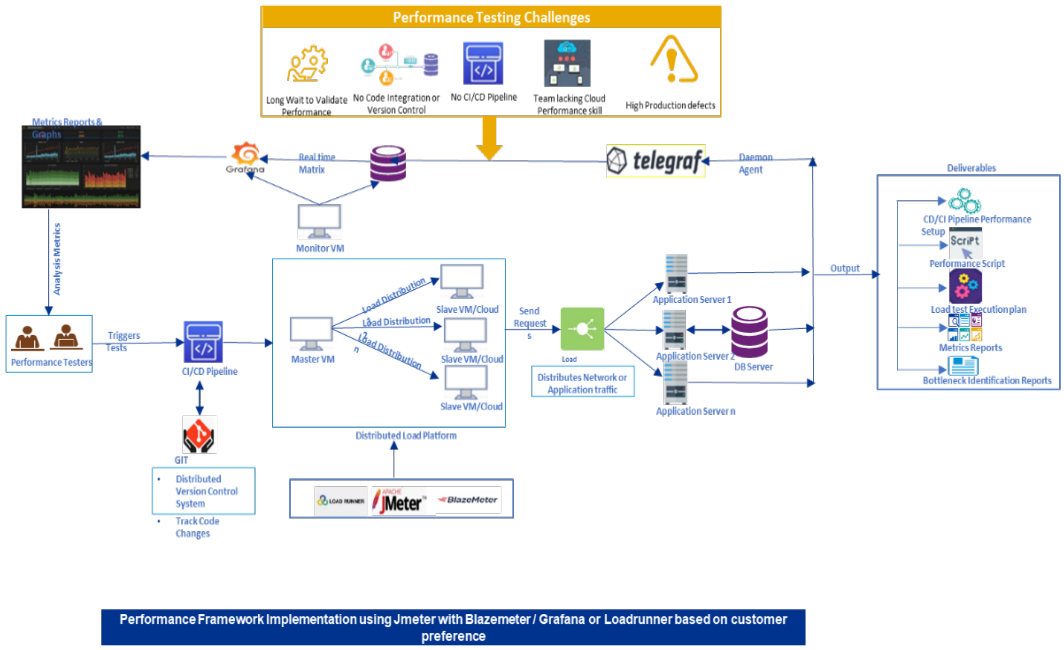

FIGURE 12: PERFORMANCE TESTING FRAMEWORK

Performance testing framework highlights

- Unified framework for performance testing
- Supports all types of performance testing such as stress, load, and endurance
- Supports web applications, cloud, mobile (iOS and Android), web services [Soap & Rest API] based performance testing
- Centralized, easy to configure settings for the scripts to run across the environments
- Our framework utilizes open-source tools along with native and third-party profilers
- Pro-Agile – CI enabled using Jenkins

Performance testing key benefits

- Performance testing takes a shift-left approach into the development phase to make the process more agile and flexible to identify performance issues as early as possible
- The code can be performance tested as part of Continuous Integration (CI) build cycle in lower environments and developers can get feedback
- Use of open-source tools along with native and third-party profilers provides economical and realistic performance monitoring and database server profiling

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User Acceptance Testing (UAT) sessions

We will work with MassTech to coordinate UAT sessions prior to each production deployment following the below principles:

- **Realistic Workflow Simulation:** We will simulate actual working conditions using a “Day in the Life” structure to verify that the platform supports expected user journeys, including dataset discovery, synthetic data generation, and Commons Credits usage.
- **User-Driven Scenario Execution:** AI Hub stakeholders and representative users will execute test scenarios that reflect typical end-to-end processes and data transactions. This helps ensures the platform is intuitive, functional, and aligned with user expectations.
- **Use of Real Data:** Where appropriate, real or production-like data will be used to simulate business-as-usual activities. This helps validate data integrity, governance enforcement, and system responsiveness under realistic conditions.

Production Testing

We will work with MassTech to coordinate production testing and provide a medium for a limited group of users to report issues and feedback so that we can triage and resolve.

- **First Occurrence Monitoring (FoM):** Applications will be released to a limited group of users for early validation. Feedback and issues identified during this phase will be addressed prior to full-scale deployment, helping ensure readiness for public launch.

7.2 Train end users and administrators

Effective training is essential to ensure successful adoption, secure operation, and responsible use of the DCC platform. KPMG will deliver a comprehensive training program tailored to both technical administrators and non-technical end users, aligned with the platform’s governance, security, and ethical AI requirements.

Our training approach delivers role-based, scenario-driven enablement aligned to the platform’s security, governance, and ethical AI requirements. Training is modular to support phased rollout (MVP → Synthetic Data → Fairness Dashboards) and combines documentation along with up to three two-hour live sessions for each phased release which can include a mix walkthroughs, tutorials and labs as appropriate. The live sessions will be recorded and can be used as on-demand sessions for future training along with Databricks provided on-demand training resources.

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Training Type	Audience	Focus Areas	Training Materials & Delivery	Delivery Model and Measurements
Technical Training	• System administrators • Data Stewards • Platform Managers	• Platform configuration and management • Role-based access control (RBAC) and dataset tiering • Monitoring and logging using Azure Monitor, Sentinel, and Defender • Synthetic data pipeline operations and troubleshooting • Governance enforcement and audit trail management • Knowledge transfer to MassTech's assigned stakeholders	• Interactive tutorials and walkthroughs • Role-specific quick reference guides • User manuals • On-demand video modules and webinars • Runbooks and configuration guide	• Blended delivery: live recorded sessions and office hours • Refreshers aligned to phased feature releases and updated materials with each increment
End User Training	• Researchers • Developers • Public Sector Staff • Community Contributors	• Navigating the DCC portal and dataset catalog • Submitting and accessing datasets • Using synthetic data tools and Commons Credits • Understanding metadata standards and FAIR principles • Participating in bias audits and ethical reviews		

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7.3 Prepare documentation and support materials

We will deliver comprehensive documentation and support materials to accelerate adoption and reduce operational load. Artifacts are versioned, searchable, and mapped to user roles and key workflows (i.e. dataset curation, metadata, synthetic data, Commons Credits, access requests).

Detailed Documentation

User manuals, training guides, and administrative documents will be developed and distributed, such as:

- **Administrator Guide:** environment configuration, RBAC/tiering, logging/audit, backup/restore, release management
- **Curator Guide:** dataset intake, metadata standards (DCAT/Dublin Core/Schema.org), quality scoring, provenance/lineage, publishing workflow
- **End-User Guide:** catalog search, previews, access requests, API usage, Commons Credits spend/earn flows
- **Synthetic Data Guide:** generator selection (e.g., SDV/Synthea/CARLA), privacy-utility tradeoffs, validation and reporting
- **Ethical AI & Fairness Playbook:** bias audits, metrics selection, result interpretation, documentation and governance handoffs

Support Materials

Troubleshooting guides, FAQs, release notes, and self-service resources will be created to reduce support overhead and empower users.

Ownership and quality assurance

Keep documentation up to date throughout the life the of engagement and helping ensure quality will be achieved through:

- Version control with semantic versioning; mapped to platform releases
- Periodic documentation reviews; broken-link checks and content freshness SLA
- Contribution process for community feedback and documentation improvements

7.4 Support public launch

We execute a structured launch plan that validates end-to-end workflows, coordinates stakeholder communications, and stabilizes operations via hypercare. The plan supports a phased release cadence

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and prioritizes adoption by initial pilot user groups, capturing their feedback, and adding feature enhancements to later phases.

- **Launch Readiness:** Final system checks and simulations will be conducted to help ensure readiness.
- **Communication Plan:** A targeted communication plan will announce the launch and engage the initial user base.
- **Hypercare Support:** Immediate post-launch support will be provided to address emerging issues and help ensure a stable transition. KPMG will provide 30 days of hypercare upon release of the solution at the end of each phase.
- **Launch KPIs:** Monitoring of KPIs such as user activation, time-to-first-value, credits earn/spend activity, etc. will help gather insights on user activity to help support outreach efforts.

Industry Engagement Strategy

Engaging industry stakeholders is essential for broadening the platform's reach and fostering collaborative development.

- **Workshops and Seminars:** Industry-specific workshops will demonstrate platform capabilities and gather feedback.
- **Partnerships:** Strategic partnerships with academic, public, and private sectors will be fostered to extend the DCC ecosystem.
- **Engagement Documentation:** Detailed documentation on engagement strategies and objectives will guide collaborative efforts and enhance platform adoption.

7.5 Deliverables

To support successful adoption and operational readiness of the AI Hub Data Commons Collaborative (DCC) platform, we will deliver a comprehensive training and engagement program aligned with the platform's technical architecture, governance model, and ethical AI objectives.

- **Deliverable 8: Training and Launch Materials**
    - Provide comprehensive training resources for both technical administrators and non-technical end users.
    - Include user manuals, quick reference guides, tutorial videos, and onboarding decks tailored to platform functionality.

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- Cover topics such as metadata catalog usage, synthetic data workflows, Commons Credits, and ethical AI practices.
- Support onboarding and public launch readiness through structured training sessions and self-service materials.

- **Deliverable 9: Explanation of planned industry engagement**
  - Present a strategic plan for engaging industry stakeholders including startups, enterprises, and academic institutions.
  - Outline onboarding pathways, partnership models, and collaboration opportunities.
  - Include mechanisms for feedback collection, community participation, and long-term ecosystem growth.
  - Demonstrate how the platform will promote equitable access and innovation across sectors.
- **Deliverable 10: Pilot User Feedback**
  - Capture insights from early users during controlled rollout and pilot testing phases.
  - Document usability feedback, functional validation, and recommendations for improvement.
  - Provide analysis of user experience across key workflows such as data discovery, synthetic generation, and governance.
  - Inform final refinements to support platform readiness for full-scale deployment.

8) Deliverables

Our commitment to client satisfaction and delivering high-quality outcomes is achieved through our detailed Deliverable Management process and a robust deliverable quality assurance process. By closely defining deliverables, assigning responsibilities, monitoring progress, and facilitating collaboration, we help promote efficiency and accountability throughout the project.

Our quality assurance process focuses on establishing quality standards, conducting multiple review stages, incorporating client feedback, and continuously improving our approach. This combined approach supports that the final deliverables are exceptional, aligned with client expectations, and contribute to the overall project success, fostering a strong and lasting relationship with our clients.

To facilitate seamless communication and collaboration between MassTech and our KPMG team, we will implement a document collaboration site for sharing, reviewing, and managing program-related documentation. This secure and centralized platform will streamline the exchange of information and provide real-time access to critical documentation, such as project management documentation, deliverable documentation, training material, ad-hoc reports, and other supporting materials related to the DCC project.

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Key features of our document collaboration site include:

- **Access control:** We will establish appropriate access levels for team members from both the Department and KPMG to help maintain data confidentiality and security while promoting effective collaboration.

- **Version control:** The platform will enable version tracking and control, allowing team members to easily identify the most recent versions of documents, track changes, and avoid confusion arising from multiple document versions.

- **Commenting and feedback:** Team members can provide real-time feedback, ask questions, and make suggestions on documents directly within the collaboration site, streamlining communication and improving response times.

- **Task assignment and notifications:** Our document collaboration site will facilitate task assignments related to document review, editing, and approval, with automatic notifications keeping team members informed about updates or pending actions.

- **Organized folder structure:** We will implement a well-organized folder structure to categorize and store various document types, making it easy for team members to locate necessary materials and stay up-to-date on project progress.

- **Search functionality:** The platform will provide advanced search capabilities, allowing team members to quickly find specific documents, references, or information.

By utilizing a document collaboration site, we can enhance productivity, reduce communication gaps, and help ensure the Department and the KPMG team have easy access to current and relevant information, contributing to a successful DCC project implementation.

The deliverables table below grid provides a structured overview of the key deliverables for the Massachusetts AI Hub Data Commons Collaborative (DCC) project, mapped to the relevant phases of the implementation roadmap. Each deliverable is described in detail and assigned to one or more project phases (Phase 1: MVP, Phase 2: Synthetic Data Integration & Enhanced User Experience, Phase 3: AI Fairness Dashboards, Federated Modeling, Streaming, and Advanced Governance), reflecting when it is initiated, expanded, or finalized.

#	Deliverable Name	Deliverable Description	Phase Number
1	Detailed Project Plan and Timeline	Integrated project plan covering milestones, stakeholder updates, and timeline for all phases of the DCC initiative	1

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#	Deliverable Name	Deliverable Description	Phase Number
2	Detailed Platform Architecture Documentation	Technical design and documentation of the data commons website, backend infrastructure, metadata management, security, and governance frameworks	1*
3	Sample Commons Credits ledger output	Example output from the central ledger system that tracks issuance, transfer, and redemption of Commons Credits, including transaction logs and governance features	1*
4	Initial Data Catalog and Metadata System	Implementation of searchable, filterable data catalog and metadata management system supporting FAIR principles, dataset publishing, versioning, and access control	1
5	Synthetic Data Tooling and Sample Outputs	Integration and configuration of synthetic data generation tools (e.g., SDV, Synthea, CARLA), including sample synthetic datasets and validation pipelines	2
6	Fairness and Bias reporting dashboard	Dashboard and tools for bias detection, auditing, and mitigation in datasets and models, with reporting and visualization of fairness metrics	3
7	Security and Governance Implementation	Implementation of security controls (RBAC, MFA, encryption, audit trails), governance policies, and compliance frameworks for ethical data handling	1*
8	Training and Launch Materials	Documentation, training modules, and onboarding materials for end users and administrators to support platform rollout and adoption	1, 2, 3
9	Explanation of planned industry engagement	Strategic engagement roadmap detailing how industry stakeholders (startups, private sector, research orgs) will be engaged in platform development and adoption—not just marketing, but partnership and outreach	1, 2, 3
10	Pilot User Feedback	Documentation of identified pilot user feedback to understand their experiences, challenges, and suggestions. Feedback Analysis for opportunities for system refinement, usability improvements, and decisions for broader deployment.	1, 2, 3

**Potential additions/updates in phases 2, 3 to maintain documents through enhancements implemented in later phases*

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9) Assumptions

Solution and Environment

- The DCC platform will be deployed in a hybrid environment leveraging existing MassTech's Azure tenant, integrating with Azure tenant core services (e.g. networking, identity access management, and security) and MGHPCC/AICR for compute, with no requirement for KPMG-provided hosting. KPMG will configure but not procure infrastructure. All procurement and access to Dev and Test environments will be granted prior to Phase 1 development beginning. Set up a brand new Azure tenant and core services can be addressed through a change order, if MassTech prefers a new tenant approach.
- The delivery team will be granted necessary access to Azure resources, Git repositories, and collaboration tools (e.g., Teams, SharePoint). Identified KPMG technical team members receive the required access to MassTech Azure and MGHPCC/AICR environments with elevated access to provision and configure DCC related components by end of the 3rd week of the project start.
- Key client stakeholders (e.g., product owner, data stewards, security leads) will be available for workshops, reviews, and approvals throughout the engagement.
- All Department rules, policies, procedures, standards, and other information applicable to the services will be provided prior to contract execution. We will work with the MA DCC team to mutually agree on the applicability of each policy and the protocols to comply with it.
- KPMG will not have any client data on KPMG IT, therefore requirements related to KPMG IT per the 'Department Information Technology Resources and Data Access Security' attachment are not applicable.
- There is no existing DCC technical footprint; all components will be net-new and agreed upon as part of initial design documented in the Detailed Platform Architecture Documentation deliverable.
- Any updates required to MassTech source systems to facilitate integration with the AI Data Hub are the responsibility of MassTech.

Licenses and Procurement Assumptions:

- Our pricing assumes that MassTech will be responsible for procuring and maintaining any necessary licenses or API keys for third-party services that may be integrated into the DCC platform.
- Any costs related to the Azure resources and services will be the responsibility of MassTech and are not included in KPMG estimated fees.

Implementation Assumptions:

- MassTech provides required technical support and access to configure MassTech domain.
- MassTech will be responsible to perform required User Acceptance Testing (UAT). KPMG will provide required support to perform UAT.

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- We assume that project completion and final deliverable acceptance are tied to MassTech's formal sign-off on a fully functional, tested, and "launch-ready" DCC Platform deployed to the production environment. While we will provide full consultative support for the public launch event, our final milestone is not contingent on the date of the client-led public launch itself.
- MassTech and KPMG will collaborate to identify and finalize the scope, cost, and timeline impact of any of the value added optional features/enhancements, including the ongoing option to provide managed services for the ongoing operations, support, and evolution of the DCC platform.

Security, Governance, and Compliance Assumptions:

- A business agreement will be in place with MassTech addressing compliance considerations (e.g., HIPAA).
- Multi-factor authentication (MFA) will be configured with the client's SSO/MFA capability.
- Penetration Testing and remediation of any security findings such testing may make is not in scope at this time but can be added if requested by MassTech.
- Only the production environment will hold production data; other environments are assumed to use non-sensitive data suited for non-production (e.g., public, de-identified, synthetic, etc.).

Data & Integration Assumptions:

- MassTech will provide a prioritized list of datasets to be curated as part of Phase 1 in collaboration with KPMG
- MassTech is responsible for data quality for any MassTech-sourced or MassTech-provided data.
- Although the platform is elastically scalable, compute cost will depend on the volume, frequency, complexity of transformations, and nature of the data being processed. The pricing is based on no more than 10 internal users doing data analysis at a time, ETL consists of daily batch jobs of tabular data with no more than 10GB of new data being processed per day as part of the MVP scope.
- All ingestion in MVP will be batch, no real-time streaming pipelines will be implemented in Phase 1, but the platform will be implemented to support streaming capabilities in later phases.
- Data sources chosen for initial curated datasets will provide widely accepted data formats not requiring custom parsing.
- As part of the proposed scope, KPMG will implement up to two tools integration. Additional tools can be integrated as an additional scope based on the agreement received between MassTech and KPMG.

Common Credits Assumptions:

- Credits will function as an internal incentive mechanism only; no real-currency transactions or external integrations at launch. If real-currency is required to be used, MassTech will provide integration details for payment processing and can be addressed through a change order.
- Append-only ledger with API-based reporting; blockchain or smart contract integration is out of scope

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for MVP but architecture will allow future extensibility. The extended support such as blockchain or smart contract integration can be addressed through a change order.

Governance & Access Assumptions:

- Role-based access will include Public, Registered, and Restricted tiers; no granular column-level security in MVP, but solution will be capable of this for future enhancements.

Staff Assumptions:

- KPMG staff will work mostly remotely for this engagement. As needed, KPMG team will visit in-person JAD sessions or any other agreed meeting with Masstech team.
- KPMG may leverage offshore may for development and testing tasks but will be limited to which environments they have access to in order to help ensure no access to sensitive data. Offshore resources will be provided separate roles with limited access to prevent access to configuration details or any resources outside of their development and QA scope. The KPMG offshore and onshore team will not posses any client or sensitive information within the KPMG hosted environments or KPMG laptops. The offshore team will access to the MassTech environment by remoting to the MassTech environment.

Deliverables Assumptions:

- A MassTech project manager will be named to oversee KPMG's services and accept deliverables.
- KPMG will submit its listed Deliverables for up to two (2) rounds of review in accordance with the Timeline.
- After 10 business days, KPMG deliverables will be deemed accepted by MassTech.
- KPMG will provide up to three (3) two-hours training / knowledge transfer sessions at the end of each phase.

Other Assumptions:

- KPMG's State and Local Government practice does not maintain an accounting system tailored to support receipt of a cost type / cost reimbursement contract, therefore, we are unable to provide the requested labor rate breakdown in RFP Attachment: Service Budget Template. Alternatively, we have provided fully loaded labor rates that have been developed and maintained based on competitive, market conditions. As such, KPMG would only be able to accept a T&M or Firm Fixed Price contract type under any resulting contract. Additionally, we seek to clarify it is our intent to negotiate mutually agreeable terms and conditions with MassTech if selected for award of this RFP.
- KPMG's services as outlined in this proposal constitute an advisory engagement conducted under the American Institute of Certified Public Accountants ("AICPA") Standards for Consulting Services. Such services are not intended to be an audit, examination, attestation, special report or agreed-upon procedures engagements as those services are defined in AICPA literature applicable to such engagements conducted by independent auditors. Accordingly, these services shall not result in the issuance of a written communication to third parties by KPMG directly reporting on financial data or

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internal control or expressing a conclusion or any other form of assurance.

- KPMG's role is limited to providing the services and deliverables articulated in this proposal. In so doing, KPMG will have no contacts with legislative officials or employees at any level of government for any reason that could be fairly interpreted as public policy advocacy, lobbying, or otherwise be perceived as impairing our objectivity or independence. In no event will KPMG undertake meetings with government officials on behalf of MassTech or otherwise appear in a public or private context that could be fairly interpreted as public policy advocacy, lobbying, or otherwise be perceived as impairing our objectivity or independence. In providing our services in general, KPMG professionals will take no view or cannot undertake any role that could be fairly interpreted as public policy advocacy and the firm's work is not intended to be used as such or in that context. Engagement deliverables will be client-branded or plain-paper and provided as holistic works to be read and interpreted only in their entirety.
- Neither KPMG nor its professionals will provide legal advice or engage in the practice of law in connection with the resulting engagement. All questions of law, including but not limited to the interpretation or drafting of regulations or statutes, shall be the sole responsibility of the client in consultation with its counsel.

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References

Reference 1

Name: Ohio Secretary of State		
Contact: Josh Jaffe	**Phone: (614) 696-6414**	**Email: jjaffe@OhioSOS.gov**

KPMG executed a cloud modernization project for The Office of the Ohio Secretary of State. The State's goal was to increase integrity, standards and trust in their voter registration, absentee ballot, historic elections and business services data. They needed to bring transparency through data analysis and making the data more readily available, both to the public and internal users.

Before the project, data was stored in on-premises Oracle databases that were difficult to manage, scale, and access. This infrastructure, along with older data models, made extracting the full value of its data assets challenging for the Office. To accomplish this modernization goal, KPMG held workshops with the Office to understand the current challenges and the desired future state of the data platform. We then proposed multiple architectural solutions and worked with the Office to align architecture that met their security, scalability, budget, and end user needs. The final architecture was built on Microsoft Azure and used Synapse Analytics as the core data platform.

As part of the modernization one of the key components was around the data governance of the voter and business services. These requirements had to be both identified and documented in order to create a maturity roadmap specific for the Ohio SoS. Additionally, the team help to identify potential data stewards and help to educate and prepare business users for the role requirements within the data governance space. From the technical perspective KPMG created templates and processes for collecting metadata and data lineage and performing ad hoc data quality as well as recommendations for future phases of the data governance implementation.

After the creating of the data governance roadmap and architectural designs were completed, KPMG started the development and implementation work, utilizing an agile approach. We created development, user acceptance testing and production environments that allowed us to continually develop, test and release deployments. Additionally, KPMG held additional workshops to understand and document the current data models, and to design and document the future state data models. KPMG then developed ETL/ELT (Extract Transform Load/ Extract Load Transform) pipelines that extracted data from the on-premises databases, ran validation checks, loaded data into the cloud platform and modeled the data.

Once the data platform had been built and loaded with data, KPMG developed Power BI dashboards for both internal and public use. These dashboards allowed non-technical users to research and answer questions surrounding business services, historical elections, absentee ballots and registered voter data. Throughout the dashboard development KPMG worked directly with IT, functional departments, ADA consultants, and external stake holders to provide input on the final dashboard designs and help ensure they were fully ready for public ion.

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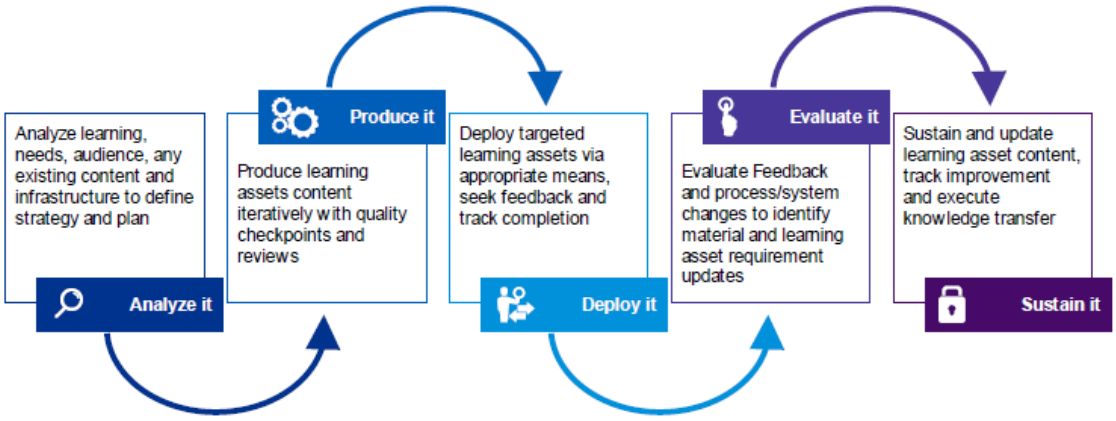
During this project, team KPMG developed a five-phased approach for training development and delivery, which was repeated throughout the duration of the project to drive successful onboarding and training of Department users. The phases of this approach occurred cyclically in time with the overall cadence of the project and repeated with each release of a dashboard. The five phases are:


Analyze learning, needs, audience, any existing content and infrastructure to define strategy and plan
Analyze it
Produce it
Produce learning assets content iteratively with quality checkpoints and reviews
Deploy targeted learning assets via appropriate means, seek feedback and track completion
Deploy it
Evaluate it
Evaluate Feedback and process/system changes to identify material and learning asset requirement updates
Sustain and update learning asset content, track improvement and execute knowledge transfer
Sustain it

This phased approach allowed The Office of the Secretary of State of Ohio to keep close track of training activities and where they were in relation to the broader project. It emphasizes the importance of understanding all our user's needs, both prior to creating training materials. And perhaps most importantly, it has built-in steps for gathering and assessing feedback to make training sustainable after the conclusion of the engagement.

During the project KPMG also conducted multiple training sessions to allow the Office to gradually take ownership of the system and provide feedback and enhancement requests for future development cycles. These enhancement requests were incorporated into our sprint plans and released in later deployments. Additionally, KPMG provided extensive documentation on the system design, pipeline logic and data lineage to allow for the smooth transition and maintenance of the delivered system.

Reference 2

Name: Morehouse School of Medicine – National COVID-19 Resiliency Network (NCRN) Health Equity Platform		
Contact: Lora Wills	**Phone: 404-756-8932**	**Email: lwills@msm.edu**

Morehouse School of Medicine (MSM) a $40 million grant to fight COVID-19 in racial and ethnic minority, rural and other communities disproportionately impacted by the pandemic. The grant tasks the Atlanta-based institution — one of four HBCU (Historically Black Colleges and Universities) medical schools in the nation — with coordinating a strategic network of national, state, territorial, tribal, and local organizations to deliver COVID-19-related information to communities hardest hit by the pandemic.

MSM was looking to develop a platform for communication and dissemination of information to link our most vulnerable populations to right care at the right time aimed to decrease infection and death rates. To do this,

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this a platform needs to be supported by a curated data source which aggregates data from various public and private sources. MSM sought a partner who had a deep understanding and experience in customer-based applications, data and public health and appreciated the unique challenges to build a platform that is truly focused on supporting citizens. MSM was looking for a partner who could:

- Defining the customer journeys and validating the different scenarios and uses-cases for citizens and community based organizations
- Analyze, curate and present data in a way that is meaningful and helps users connect to the right resources
- Build an integrated platform leveraging Service Cloud, Community Cloud, Marketing Cloud and KPMG Signals repository

Together, KPMG and MSM immediately began to develop a platform that gathers critical resources and data on COVID-19 to connect families to culturally and linguistically appropriate information and services.

As the partner for NCRN KPMG delivered the following:

- Definition of customer journeys, use cases and scenarios for target population and community-based organizations, determined by ongoing requirement gathering sessions and agile product development
- Development and implementation of the NCRN call center, mobile and web applications on Salesforce Experience Cloud, Marketing Cloud, Mobile Publisher, and Service Cloud with an integration to KPMG's Signals Repository. The MSM NCRN mobile app is available for download in Android and iOS app stores.
- Development and deployment of a state-of-the-art communication and engagement strategy to help ensure maximum value for the targeted population

Reference 3

Name: InfoX		
Contact: Rob Moroney	**Phone: (312) 665-1288**	**Email: rmoroney@KPMG.com**

A leading data-driven organization sought to modernize its AI and analytics capabilities, aiming to establish a secure, scalable, and innovative data platform for advanced use cases across the enterprise. To achieve this, the organization engaged KPMG, leveraging our multidisciplinary experience in AI strategy, data governance, technology integration, and project management.

Over the course of our engagement, KPMG led a multi-phase initiative focused on (1) architecting and implementing a robust data platform and (2) enabling responsible AI integration through enhanced governance and operational controls.

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Architecting the platform: Building a foundation for AI and analytics
The initial phase centered on designing and deploying a modern data platform tailored to the client's unique requirements. Key steps included:

- Validation engine for permissible use of data: Developed and implemented a validation engine to enforce data usage policies, helping ensure compliance with regulatory and contractual obligations.
- Custom reference taxonomy for Databricks tags and context enrichment: Created a tailored taxonomy to support granular tagging and context enrichment, enhancing discoverability and governance of data assets.
- Dedicated MCP servers for AI client integrations: Architected dedicated managed compute environments to facilitate secure, scalable integration of AI workloads and advanced analytics.
- API gateway for fine-grain security controls and monitoring (MuleSoft): Established an API gateway to provide comprehensive security, real-time monitoring, and audit capabilities for all data access and integration points.

Empowering governance: Operationalizing responsible AI
The second phase focused on aligning the platform with enterprise governance and operational best practices. Key steps included:

- Governance structures: Established governance frameworks and steering committees to oversee AI and data initiatives, helping ensure alignment with organizational risk tolerance and compliance standards.
- Security and monitoring: Integrated advanced security controls and monitoring mechanisms to safeguard sensitive data and maintain transparency across the data lifecycle.
- Roadmapped innovation: Identified and prioritized future enhancements, including GenAI-powered search, synthetic data generation, and fairness & bias audits, to support ongoing innovation and ethical AI practices.

By delivering a secure, scalable, and future-ready data platform, KPMG positioned the organization as a leader in responsible AI and analytics adoption. Our approach enabled rapid deployment of advanced capabilities while maintaining rigorous governance and compliance, setting a precedent for effective and ethical data-driven transformation.

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Qualifications

Qualification 1

Name: State Healthcare Agency's Framework for Success with Generative AI

A State Healthcare Agency aimed to pioneer the use of Generative AI within the public sector, seeking to enhance process efficiencies across state agencies. This ambitious goal required a carefully structured approach to integrate AI technologies responsibly and effectively. The Agency reached out to KPMG for help, and we deployed a multidisciplinary team, drawing on our experience in areas that included AI strategy and development, cybersecurity, health and government services, data management, technology innovation, and project management and governance.

Over the course of 10 months, KPMG led a two-phase initiative that focused on (1) assessing the agency's current state of AI readiness and defining a go-forward vision and strategy and (2) enabling that vision and strategy through newly created governance structures.

Establishing the vision: A strategic foundation for AI
This first phase was focused on assessing the agency's current AI landscape—existing policies, procedures, and projects already in the roadmap—and then creating an overall guiding vision for AI. Key steps included:

- Workshops: Led executive strategy sessions with cross-functional teams to create a common foundation of awareness around AI risks and leading practices. In addition to the chief information officer (CIO) and chief information security officer (CISO), C-suite representation included leadership from data, privacy, technology, governance, and legal.
- Acceptable usage policy (AUP): Drafted proposed addendum to the existing AUP to bring enterprise governance of AI technologies in line with the organization's risk tolerance and documented AI use cases.
- Security framework: Developed an initial AI security framework, based on established AI guidelines from the National Institute for Standards and Technology (NIST), but then tailored to meet the agency's unique requirements and risk tolerances in both the short term and long term.

Empowering governance: Making it operational
The second phase focused on establishing an operational foundation for AI that aligned with the agency's overall technology infrastructure. Key steps included:

- GenAI Steering Committee (SteerCo): Established a SteerCo to oversee AI going forward, which includes the CIO, CISO, and key stakeholders from privacy, data, and legal. Group meets at least monthly to help ensure alignment with the new AI framework and make adjustments when needed.
- AI intake process: Created an AI intake form to help the SteerCo prioritize AI use cases by evaluating their potential risks versus their potential opportunity to meaningfully enhance the agency's services.
- Core principles: Established foundational guidelines to govern the responsible use of AI, with periodic review and updates by the SteerCo.
- Risk assessment: Operationalized an AI risk assessment framework that enables the SteerCo to vet the risks of each potential use case across multiple functions. For example, in looking at potential AI models,

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the CISO might look at security issues, legal can identify possible bias risks, and the privacy officer can evaluate data transparency concerns.

- Data provenance standards: Updated enterprise data standards to include new requirements around AI, helping ensure clear documentation around the origin and evolution of data throughout the AI lifecycle.

The project positioned the agency as a trailblazer in the use of Generative AI in the public sector. By establishing detailed policies, governance structures, and demonstrating a commitment to thorough AI use case assessments, the state not only enhanced its enterprise process efficiencies but also strengthened its cybersecurity posture. This strategic approach has set a precedent for responsible and effective AI implementation in public services.

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Our Core Team

Our leading government experience

KPMG is a recognized public sector professional services leader, as reflected by the size of our government market share, deep involvement in sector organizations, and thought leadership. KPMG has made serving the governmental sector a key focus of our business and our future. We have dedicated over 3,000 professionals to concentrate on public sector services, and KPMG proudly serves more than 2,300 government clients nationwide. Therefore, KPMG provides the ability to draw additional resources from a deep bench with an extensive range of skills to augment the project staff as necessary. Our in-depth understanding of business processes and systems specific to public sector enterprise data management capabilities and data sharing requirements helps us to deliver tailored solutions for AI Hub DCC platform and assist our clients in achieving their goals.

At KPMG, we prioritize our clients' project success by assembling the right staff and resources, allowing us to effectively meet the requirements of each client. Our strong focus on AI Hub DCC platform implementation, combined with our collaborative approach, helps provide the necessary support for our clients to achieve their goals.

The right team, the right resources

KPMG is proud to propose a team of talented professionals that possess the skills and experience required to successfully advise MassTech through all stages of the DCC implementation. As your strategic business transformation partner, we designed our staffing approach to provide the right resources, at the right time, and with the right competencies to manage modernization and innovation effectively.

The KPMG team brings the essential Microsoft Azure, Databricks, Enterprise Data Management, Data Integration, Data Sharing, Project Management, Organization Change Management, Testing, Business Analysis, Technical, and Security experience to help MassTech meet the requirements for this mission-critical project. In addition to our project team members and key staff, MassTech will also realize the benefit of our extensive pool of support team members and subject matter professionals (SMPs) who bring deep experience in government Data-driven AI solutions. Throughout the project, MassTech will have access to our network of subject matter professionals (SMPs) who will contribute specialized experience in areas such as synthetic data generation, metadata management, AI fairness, and platform governance. These SMPs will assist in maintaining the DCC platform’s high standards of quality, ethical compliance, and technical performance. Our team is committed to delivering a solution that reflects the strategic vision of the AI Hub, supports equitable access to data, and promotes responsible AI innovation across the Commonwealth. The organizational chart below is followed by brief engagement team biographies.

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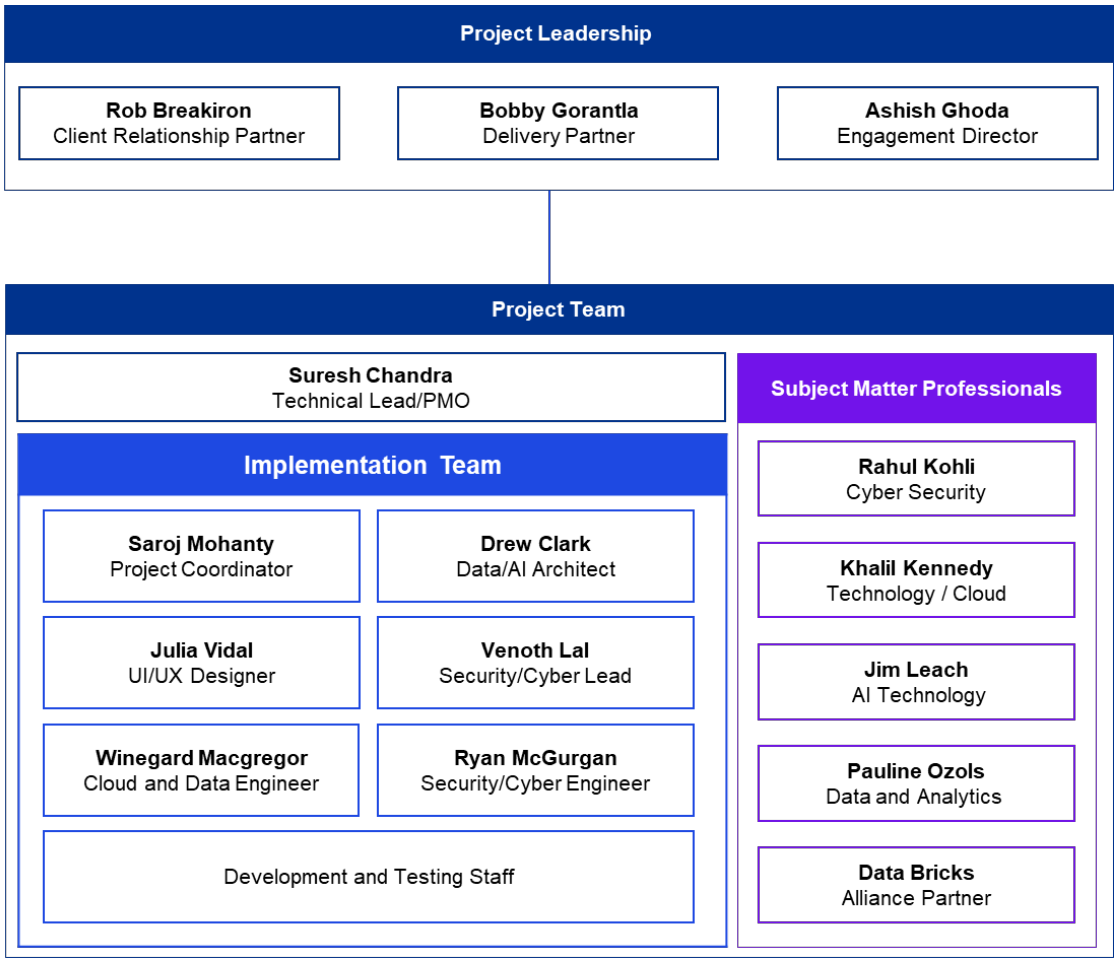

Note – Please note that the organizational chart may change depending on resource availability.

FIGURE 13: ORGANIZATIONAL CHART

The team outlined in our organizational chart will serve as the core engagement team responsible for delivering the services outlined in this RFP. These professionals will work in close collaboration with the Massachusetts Technology Collaborative and the AI Hub stakeholders to meet the goals of the Data Commons Collaborative (DCC) initiative. While KPMG reserves the flexibility to adjust staffing based on evolving project needs, any proposed changes to contractor or subcontractor personnel will be communicated in advance and subject to approval by MassTech to maintain continuity and alignment with program objectives.

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Resumes

Bharat “Bobby” Gorantla

Principal

KPMG LLP
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Austin, TX 78701

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484-319-7937
bgorantla@kpmg.com

Representative clients

- Florida DEM, DEO, DCF, DMS
- TennCare
- California Child Welfare Digital Services
- Colorado Department of Health Care Policy
- Ohio Secretary of State
- U.S. Department of Labor
- NYC Department of Investigation
- NYS Dept. of Health
- Indiana Department of Housing

Education, licenses & certifications

- MS, Software Engineering, Carnegie Mellon University
- MBA, Penn State
- BS, Ryerson University

Background

Bobby is a Data and AI leader at KPMG focusing on the State & Local market over the last 9 years at KPMG, using innovative technology enablement capabilities, data and analytics, cognitive automation strategies and Artificial Intelligence, across a variety of domains. He has been the lead on multiple data analysis & implementation engagements, across healthcare services, and State & Local agencies focusing on Emergency Management, Medicaid, Child Welfare, Federal/State Funded Programs, etc. Bobby has also been involved in the selection and implementation of emerging technology, cloud adoption and migration, designing and executing data analytics services, and transitioning and managing the services we offer as a one firm approach.

Bobby has extensive experience in the implementation of cloud enablement solutions, development and implementation of advanced analytics, and cognitive automation/artificial intelligence models. Bobby has been highlighted in several national campaigns, thought leadership and national conferences on his use of AI in Government.

Professional and industry experience

- Federal Funded Fraud Programs: Many state agencies are struggling with the ever-evolving fraud techniques that fraudsters are using to steal money from the government in Federal Funding programs such as Rental Assistance and Homeowners Funds. Bobby led a cross functional team to develop an innovative vendor agnostic solution to detect and prevent fraud payments in these applications. He led the development and deployment of an AI solution to identify fraud occurring within multiple state’s emergency rental assistance programs. The solution has been deployed to over 9 states stopping over $100M in fraud.
- AI capabilities Smart Grants Platform: Led the development and deployment of the firm’s Smart Grants platform focusing on Innovation and AI. The AI enabler scans unstructured documentation from subrecipients and applicants and quickly validates them in a matter of minutes. The AI enabler focuses on FEMA and Housing program and is expanding to other sectors in the industry.
- Healthcare Data Driven Capabilities: With over 10 years of healthcare experience, Bobby has delivered a number of healthcare led analytics projects in the areas of value-based programs, health equity, rate setting, clinical and performance-based improvements, and market intelligence.
- Data Driven Capabilities: Bobby has led the development of data strategy, data management and data modernization for his State & Local clients. He has delivered on engagements where his teams assist State & Local with data preparedness in lieu of a modernization or an implementation. In addition,

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agencies continue to struggle to find their data at the enterprise level and has created a framework for success powered by a Modern Data Platform.

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Rob Breakiron

Managing Director

KPMG LLP
8350 Broad Street
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Contact
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rbreakiron@kpmg.com

Education, licenses & certifications

- MBA, Loyola University of Chicago
- MS Finance, Loyola University of Chicago
- BS, United States Naval Academy
- Certified SAFe Consultant
- Certified SAFe Lean Portfolio Manager
- Certified Scrum Professional
- Certified Scrum Master
- Lean Six Sigma Black Belt
- ITIL v3 Foundation

Background

I serve as a strategic technology advisor, helping my government clients transform their business. I recognize that today's technology leaders face increasingly complex demands and challenges in becoming the strategic technology partners their businesses require. I help CIOs, technology leaders, and business executives harness technology disruption, improve technology operating models, reimagine methods and processes, manage technology resources more effectively to drive agile adoption and improved business performance, enhance the customer and citizen experience, and improve the strategic value of their technology investments.

Professional and industry experience

- As the executive lead for the Massachusetts Executive Office of Technology Services and Security (EOTSS) ServiceNow platform assessment, strategy, and roadmap, I spearheaded an overhaul of the underlying processes to optimize platform performance. The initiative involved a comprehensive health scan of the technology and procedures supporting the platform, followed by targeted training for Commonwealth platform operators. I provided architectural and strategic guidance for platform expansion and proactively addressed technical backlogs, helping ensure streamlined operations. Currently, I facilitate the extension of the platform's capabilities to other Commonwealth agencies.
- In my role as executive lead for a business continuity and disaster recovery engagement at a private university, I transformed their preparedness processes to protect critical systems and data against disruptions. My team developed and implemented robust business continuity and disaster recovery plans, conducting regular risk assessments and establishing comprehensive backup and recovery protocols. We led training sessions that equipped staff with the skills necessary for managing emergency scenarios, helping ensure a resilient institutional response.
- Leading the Massachusetts Bay Transportation Authority (MBTA) technology organization in a current state assessment and roadmap creation, I revamped operational processes to align with both internal and rider community needs. Gathering key feedback and requirements from various business areas, I developed an inclusive technology operating model and enterprise architecture. This approach addressed challenges and equipped the organization to meet evolving demands efficiently.
- During my engagement with the NYC Housing Authority, I provided essential support to a new CIO by evaluating and enhancing the IT portfolio and service quality. Initially focused on application rationalization, the engagement expanded to include a comprehensive assessment of their current state. I developed pragmatic processes to elevate technical maturity, cost efficiency,

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governance, and financial transparency. Additionally, I enhanced processes for optimally leveraging cloud and hybrid infrastructure, enterprise architecture, and customer experience.

- As the technical executive managing the deployment of 300,000 iPads for remote learning in NYC public schools, I orchestrated a massive overhaul of processes to help ensure seamless execution during the COVID emergency. As the primary contact for the CTO, I guided the strategy for device procurement, provisioning, and distribution. This included leading the ServiceNow migration, enhancing cloud architecture adoption, managing mobile devices, and transforming the operating model. My advisory aimed at improving customer experience, boosting transparency, and securing efficient delivery in collaboration with vendor partners.

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Pauline *Ozols*

Director

KPMG LLP
200 E. Randolph
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Contact
pozols@kpmg.com

Education, licenses & certifications

- MS, Villanova University
- BS, DePaul University
- Contributor, Data Office ROI Playbook
- Certified AI for Business Strategy, MIT Sloan School of Management
- Data Management Capability Assessment Model (DCAM) 2.2 Accredited, certified trainer

Background

Pauline brings 10+ year's experience in enterprise data modernization, specializing in data management. She has guided clients from initial state assessments and strategy and business case development to the operationalization and advancement of data and analytic capabilities. Beyond her client engagements, Pauline plays an active role in the Enterprise Data Management Council, participating in global working groups dedicated to enhancing and updating its data capability assessment framework. Additionally, Pauline has helped author thought leadership articles on topics such as data ROI and data product valuation. She regularly educates Boards and C-suite audiences on enterprise data management and its importance to organizations.

Professional and Industry Experience

- Led team to support build out of Collibra platform (reference data management, data quality, and metadata management/lineage capabilities) for large north American bank, executing in alignment to newly formed enterprise data standards and operating model.
- Assessed data management capabilities for a State agency and used output to shape data governance operating model and roadmap. Continued to support client in operationalizing its data governance program through the developed of data standards, policy and procedures and piloting on priority use case while educating the client's data and business teams.
- Evaluated data management capabilities through cross-functional engagement of 50+ stakeholders for manufacturing and quality organization of pharmaceutical organization. Assessment informed the design of target operating model, and long-term roadmap to enable data produces, improve data integration, and expand its data quality program beyond integrity efforts.
- Finance function of biotechnology organization sought to achieve 80% no-touch forecasting creating global headcount efficiencies. Developed roadmap of initiatives, resources and created sample Power BI dashboards to convey predictive forecasts and accuracy to Executives and country leaders
- Led the development and implementation of a Data & Analytics strategy, roadmap, and target operating model enable data products and a data marketplace for an American food manufacturer, providing the business with curated, high quality and trusted data and BI, analytical solutions available in a centralized portal.
- Advised financial services company with $2T assets under management on automation and expansion of its data quality program. Identified new areas to implement quality, evaluated tools to accelerate data quality analysis, and

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expanded offshore scope while enhancing program communications to drive adoption, convey business value.

- Led data capability maturity assessments (DCAM) for multiple clients, providing clients with a deep understanding of current state gaps and opportunities against leading practice framework. Developed advisory recommendations on next steps to mature data and analytics capabilities relevant to vision, culture, and maturity of the organization.
- Developed the office of the Chief Data Officer (CDO) for $30B multinational information technology organization, including key roles, estimated sizing to scale and maintain capabilities, and interaction model. Identified priority use cases the CDO function could implement, leading to cost savings or revenue capture for the business.
- Established a data and analytics program to help client achieve 360 view of customers, uncover cross and up-sell opportunities, comply with new regulations, and transform into data driven organization. Supported client in operationalizing new data governance program, including cataloging, as well as implementation plan for master data management (MDM).
- Supported Finance office transformation for $40B telecommunications company by operationalizing data governance team, including cataloging key data and developing roles, workflow in selected cataloging tool (Collibra).

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Ashish Ghoda

Director

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Representative clients

- Florida Executive Office of the Governor
- Florida Turnpike Enterprise
- Central Florida Expressway Authority
- Florida Department of Health
- Florida Department of Law Enforcement
- Pennsylvania Turnpike Commission
- Alabama Department of Transportation
- Nissan North America

Education, licenses & certifications

- MS, Information Systems, NJ Institute of Technology
- Strategic Business Management Certificate, Harvard University
- BS, Electronics Engineering, BVM Engineering College, India
- TOGAF Certified
- Blockchain Solution Architect Certified
- Microsoft Certified Professional
- Informatic-Data Governance and Privacy (Foundation)
- RedHat Foundation

Background

Ashish brings over 28 years of diversified and progressive technical and leadership experience. As part of KPMG US Advisory, Ashish a Director in the KPMG Lighthouse Cloud Engineering and Data and Analytics practice. He brings innovative ideas to realization leveraging emerging technologies and data assets. Ashish is passionate about Cloud Technologies, Data Integration, Automation, Data and Analysis, and Artificial Intelligence.

Ashish has successfully led the development of cloud and data strategy and led large-scale cloud and application modernization, big data migration, and implementation of data warehouse, system and data integration, intelligent analytics and reporting, and enterprise data management engagements by partnering with clients and alliances.

As a State & Local Government Microsoft alliance leader and a Global Community CoE leader of Red Hat and IBM at KPMG, Ashish is defining and developing cloud-agnostic strategy and accelerators to drive hybrid multi-cloud cloud strategies, data integration, and digital transformation for clients.

Ashish is an author/co-author and technical reviewer of multiple books and articles on Microsoft platform. As a co-author of a research paper, he presented the paper at the 36th Annual Hawaii International Conference on System Sciences (HICSS).

Professional and industry experience

Ashish has connected strategies to execution and driven value into client services by leading multi-disciplined professionals to deliver digital transformation initiatives, to perform experimentation and design-thinking innovation, and to architect, design, and deliver trustworthy large-scale data-driven clients' solutions on cloud platforms.

- Development of business architecture, cloud strategy, and roadmap for cloud programs, global enterprise solutions, and managed service
- Led transformation of traditional SDLC, Engineering, and Data Analytics practices to modern and agile DevOps-driven Cloud Engineering, Data Integration, Data Management, and Data Analytics practice for a global enterprise
- Leading enablement of the cloud and data strategy including implementation of data warehouse, data integration hub, and reporting at Department of Transformation (southeastern region)

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- Leading 650+ TB of structured and unstructured data integration and migration at Department of Transformation (southeastern region)
- Led Enterprise Data Management, Data Governance, Data Integration, Data Quality Management, and Master Data Management implementation leveraging Informatica product suites on Microsoft Cloud Platform at Depart of Transportation (northeastern region)
- Led data and analytics engagement to establish a financial hub by integrating with ERP systems and other data sources and developing intelligent reporting solution to realize VIN-level profitability
- Implementation of customer segmentation solution to perform customer and profitability analysis for supply chain manufacturing industry segment
- Experience in developing data integration and intelligent solutions leveraging diversified large-scale data gathered from the platform such as SAP, SQL Server, 3rd party data sources such as LexisNexis, and unstructured data to perform automated internal auditing
- Led transformation of data center-centric ITSM system to ServiceNow cloud-based ITSM, system integrations with ServiceNow, and development of a Marketplace leveraging ServiceNow and Azure cloud platform
- Experience in technical program and delivery management
- Experience in establishing streamlined process, standard, architecture and governance frameworks to mitigate risks, reduce costs, and help ensure interoperability while driving the patterns-driven development of reusable accelerators, shared services, and technology platform
- Establishing and leading CoEs, governance groups, and communities in the areas of Power BI, RedHat, Cloud, Data, Architecture, and Open Source Software

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Jim Leach

Director

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Education, licenses & certifications

- BSc Chemistry
- MSc Business Analytics
- Coursera specialisations:
  - Data Science (Johns Hopkins)
  - Executive Data Science (Johns Hopkins)
  - Machine Learning (Stanford)

Technical Skills

- R
- SQL
- Cypher
- Python
- Git
- Linux/Windows/Mac

Background

I help clients solve business problems using data, analytics, AI, and algorithms. I work across the end-to-end analytics spectrum, from understanding the problem to be solved, turning user requirements and needs into a technical and analytical approach, to developing and deploying solutions for use. Clients leverage my desirable combination of business awareness, technical proficiency, and communication skills to design and deliver data and analytical solutions. I help clients with data and analytics, knowledge graph development, and Gen AI solutions built on top of foundational automation and analytics.

Professional and industry experience

- I lead an engagement for Government Sponsored Enterprise to implement AI Risk Governance. Building on the KPMG Trusted AI framework, the project supported the client with creating an AI Governance framework, creating AI governance Key Risk Indicators and Key Performance Indicators, establishing an AI intake and inventorying process, conducting AI Risk Assessments, and establishing the enterprises' expectations and requirements for the safe and well-governed use of AI across their business divisions and use cases.
- I lead an engagement for a major US city agency assisting them with monitoring the city's support for vulnerable populations. Leveraging KPMG's Modern Data Platform, and machine learning and AI tools, Ignite, the team developed models to process contracts and invoices submitted by city vendors to detect potential anomalies, potential pricing discrepancies or other indicators of potentially problematic invoicing practices. The team applied these models to hundreds of contracts and thousands of contracts, totaling multiple millions of dollars in volume and leveraged dashboarding an generative AI for report generation and data visualization.
- I lead an engagement for a major US county that had been sanctioned by the Dept. of Justice and needed support with collecting data and leveraging analytics and AI for better KPI definition and tracking as part of their agreement with the DoJ. I led the team developing bespoke data collection apps and performing the necessary analytics to establish and report on the KPIs the client was interested in in real time.
- I lead data and analytics work on an engagement for a major US state for whom KPMG is processing applications for emergency rental assistance. My team developed integrations with the data collection engine used on the project and applied our Fraud, Waste, and Abuse (FWA) scoring and machine learning routines that quantify the potential for FWA in each application, writing data back to the workflow and case worker platform in

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use for this work. We conduct active, ongoing monitoring, as well as performing deep-dives and reviews into individual applications that require further review and audits.

- I integrated and analyzed structured trade and market data, along with unstructured communications data for an international investigation into fraud related to the manipulation of foreign exchange rates through interbank collusion. I performed statistical analysis in R for anomaly detection and change point detection in time series, implemented bespoke data mining techniques in SQL to detect abnormal trading behavior aligned to findings from communications analysis, and trained AI classification algorithms using tree-based approaches to score communications based on likelihood of relevance to our investigation.
- Worked with Internal Audit at a US bank to develop an Anti Money Laundering (AML) machine learning model to be used as part of AML audits as part of the sample selection process. We worked closely with the client to develop an AML-relevant Suspicious Activity detection model leveraging machine learning. Using the client's previously filed Suspicious Activity Reports (SARs) and transactional data on ATM usage, peer to peer, KYC, and more, the team trained and validated a model on historically filed SARs. In addition to building and validating the model, the team productized the model and packaged the app for quick use in the case of a short audit time period. This model produced better risk-based samples as well as explanations for why the samples had been selected (using explainable ML) for the audit.
- I have lead KPMG's knowledge graph analytics practice since 2019. I designed the KPMG Intelligent Graph solution architecture and lead the implementation and continual enhancement of graph solutions for our clients. I manage our team of graph data scientists and developers as they work with clients to gather and integrate data, implement the solution, make improvements, and add new features based on feedback we receive from clients and internal stakeholders.
- I'm an RStudio certified R & tidyverse instructor and lead the development and delivery of both KPMG Statistics Academy and KPMG Graph Analytics Academy. I've delivered these trainings to clients in the past, as well as to both to KPMG staff and to students at the Imperial College London Data Science Society. I was also a guest speaker at the EARL Conference (Europe's largest conference dedicated to the R programming language).

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Suresh Chandra

Manager

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Representative clients

- Central Florida Expressway Authority
- Alabama Department of Transportation
- Los Angeles County Metropolitan Transportation Authority
- Verizon Wireless
- Florida Excellence of Governor (EOG)
- JP Morgan Chase
- RCN Capital

Education, licenses & certifications

- Bachelors of Science
- Master of Business Admin
- TOGAF 9.2 Certification
- Azure Solution Architect
- Azure AI Certification
- Google GCP Certification

Background

With extensive IT experience, including over a decade as a Senior Cloud Technical Lead at KPMG LLP, I have a track record of leading successful engineering and architecture projects, delivering effective IT solutions and migrations for State, Transportation, Banking and Financial Clients. My experience covers platform engineering, cloud application, infrastructure, Integrations, and DevOps. As an application and infrastructure architect, I bring a unique perspective that understands challenges from both sides.

In recent years, my focus has been on cloud-based application migration and modernization, driving complete organizational transformation to the cloud. I specialize in designing and delivering solutions that facilitate this transition. Working closely with your team, I will collaborate to execute a suitable approach throughout the entire lifecycle of the cloud solutions. This encompasses planning, initiation, execution, monitoring, and control. With my extensive experience and experience, I am confident that I will significantly contribute to the success of the project and enable your organization's cloud transformation..

Professional and industry experience

- Microsoft Azure Cloud Architect with extensive experience in migration strategy planning of Microsoft SQL databases with spearheading Design, development, implementation of IT Cloud solutions.
  Experience in Microsoft Azure Cloud Services and AWS/Google - including create and manage Subscriptions, Azure Resource groups, Azure Elastic Pools.
- Experience in Azure SQL Managed instance / Azure SQL databases and virtual machines (Azure VMs).
- Provides experienced content/professional leadership on complex Technical Strategy & Architecture assignments/projects and extensive experience in Microservice Architecture.
- Experience in develop deployment automation to provide a fully functional cloud stack in Azure that supports to the client’s environments.
- AKS -Azure DevOps -Azure cloud infrastructure engineering (VNETS, resource groups, VM’s, SQL PaaS, hybrid connectors).
  Good experience on Azure Data factory, Azure data lake, Azure blob storage and data bricks, and understanding of Snowflakes, Synapse, and login app.

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- Experience on Azure Networking, Azure Monitoring/Application Insights, ARM, Resource Groups, Azure Site Recovery, Azure Back Up, Storage, Azure Serverless.
- Experienced in Administering and supporting Jira/Confluence/Bitbucket/Dynatrace/OKTA including Plugins and third-party integrations
- Successfully managed end to end project implementations valued around 10+ mil as Sr Architect/Tech Lead, including Budgeting, Resource planning and Support models from Dev to PROD environments
- Provide architectural guidance with design, implementation and testing strategies for all migrations and Application upgrades.

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Drew Clark

Manager

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Representative clients

- Florida EOG
- Florida DBPR
- Gaming & Entertainment Company
- Fairfax County
- Crown Castle

Education, licenses & certifications

- M.S. Electrical and Computer Engineering
- Azure Fundamentals Certification
- Azure Data Engineer Associate Certification
- Alteryx Designer Core Certification
- UCI Conversational AI Program Certificate
- Databricks Apache Spark 3.0 – Python Certificate
- Databricks Certified Data Engineer Associate
- Technical Skills
- Data Engineering
- Databricks (Spark, Python, Pyspark, Unity Catalog)
- Azure (Azure Data Factory, Azure Synapse, Purview, SQL, ADLS)
- Power Platform (Power Apps, Dataverse, Power Automate, PowerBI)
- Geospatial Processing (GeoPandas, GDAL, ArcGIS, Azure Maps and Cosmos DB)

Background

Drew will work with the project team to understand your business and how to manage and leverage your data to provide solutions. Drew's prior experiences range from mechanical systems, production ready data pipelines, and deep learning models in computer vision and NLP. His most recent experiences involved implementation of data warehouses, lakehouses, and ETL data pipelines using Azure and Databricks. He brings a wide breadth of experience in different phases of a project having worked on engagements ranging from ETL to reporting as well as security and data quality.

Professional and industry experience

Florida Executive Office of the Governor – Grants Management Implementation and Cloud Datawarehouse/ETL

- Solution architect for Azure build of data warehouse and integration middleware supporting integration with state agency systems (FACTS, FLAIR, PALM), and newly developed components including a data warehouse, public portal and Grant Management System

Florida Department of Business Professional & Regulations – Business Licensing Portal

- Technical lead for pilot Pega implementation for business licensing portal to replace Versa Online
- Worked with technical team to identify and design integrations, solution architecture design, environment strategy and data conversion plan

Gaming & Entertainment Company – Databricks ETL & Governance

- Worked with client technical team to perform Azure Purview PoC
- Worked with client business team to identify use cases for modernization from Teradata to Databricks
- Developed Databricks Lakehouse MVP for identified use cases and built PoC using DLT-Meta and Custom Metadata driven pipelines to build medallion architecture leveraging integrated data quality, Unity Catalog, and external integration between Databricks and Teradata

Fairfax County – MS Access Database Migration

- Worked with client to understand current state MS Access Applications functionality and backend and design future state Dynamics solutions based on use case

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- SQL (TSQL, Teradata, PL/SQL)
- DataStage
- Data Science
- Python Libraries (TensorFlow, PyTorch, Sci-Kit Learn, Pandas)
- Machine Learning (Statistical models, deep learning)
- Computer Vision (2D/3D Images, Medical Imaging)
- IBM Watson

- Designed and built a Model Driven Application using Dataverse, Power Automate, and PowerBI to replace legacy MS Access application and reports
- Performed data migration from Microsoft Access into Dataverse
- Oversaw development of Canvas application use Dataverse, Power Automate and Power Apps to replace legacy MS Access application

Fairfax County – Data Migration for Grants Management Implementation

- Worked with client to develop data migration strategy from Azure SQL DB and on-prem SQL Server to a Dataverse solution for grant management
- Worked with client to understand current state and create mappings to target state to help ensure retention of data and functionality when migrating to the new system
- Supported functional and development workstreams to perform gap analysis between source and target systems and capture required functionalities
- Acted as liaison between development team and client IT team to help configure the environment and help ensure the solution complied with policies and standards set by IT

Virginia Department of Transportation – Data Strategy

- Developed roadmap from current state data strategy to 6 months, 1 year and 2 year targets including proof of concept for Data as an Asset approach, technology, solution architecture, data governance, data quality, etc.

Virginia Department of Transportation – Cloud ETL

- Worked with a small team to design, develop, and implement a cloud ETL solution based on client requirements in Azure using Azure Data Factory (ADF), Databricks, Azure SQL DB, Data Lake, and DevOps
- Helped develop metadata-driven pipelines to extract data from on-prem SQL server, API calls, and file drops in data lake and stage in an Azure Data Lake.
- Developed Databricks notebooks to process geospatial LRS data using GeoPandas and GDAL libraries to convert data format, transform projections, and read/write from Azure SQL DB and Azure Data Lake
- Transformed data for end user consumption using ADF Data Flows and Databricks notebooks

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- Collaborated with client team to help set up Dev, Test and UAT environments and Azure DevOps release pipelines to move code between environments.
- Performed analysis on various cloud offerings on compatibility with LRS data use cases, performance, and cost comparisons
- Helped develop solution design to help ensure compliance with SEC501 and SEC525 security standards as well as meet business needs

Crown Castle – Asset Data Management Strategy

- Worked with client to understand current state architecture and physical asset relationship that make up their core products and services
- Identified critical data elements (CDE) and documented SOR's for each asset and each CDE to help identify gaps in current state
- Created logical data model for physical assets
- Documented requirements for future state and developed a future state architecture and roadmap

Mars Veterinary Health – Data Quality PoC

- Worked with client engineers to develop a PoC Data Quality framework in Databricks to create a reporting table with data quality and profiling results
- Helped develop a PoC Dashboard for reporting on data quality and data profiling results using PowerBI
- Cabinet Works Group – Cloud Data Consolidation and ETL PoC
- Collaborated with client and PowerBI team to help perform ad-hoc master data management and ETL to move data from source ERP systems into Azure SQL Database in a format that allowed the PowerBI team to create a PoC dashboard
- Used Azure Data Factory to perform ETL, Azure Data Lake Storage for staging the raw data and Azure SQL Database for storing the curated data for Dashboard purposes

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MacGregor Winegard

Senior Associate

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Representative clients

- Florida EOG
- Bank of America N.A.
- JPMorgan Chase & Co.

Education, licenses & certifications

- AWSCCP-New York
- AZDATA-New York
- AZFUND-New York
- Bachelors of Science

Background

As a seasoned tech professional, MacGregor recognizes the critical role that cloud and data architecture play in driving business success. MacGregor has experience managing and architecting cloud infrastructure with Terraform for financial service clients, including developing a custom Terraform provider in Golang, and developing microservices in AWS on ECS and Lambda. With a proven track record of implementing end-to-end Databricks solutions, MacGregor is passionate about delivering clean and reliable data that fuels innovation and growth. He has led numerous Databricks innovation initiatives both internally and with manufacturing and utilities clients. He has extensive hands-on experience implementing for streaming ETL, data quality, and analytics use cases. MacGregor is committed to staying at the forefront of emerging technologies and continually seeks new ways to optimize data workflows for enhanced efficiency and performance.

Professional and industry experience

- Developed IoT solution with predictive analytics to proactively monitor microchip manufacturing data with Databricks MLFlow. Presenter at the 2023 Databricks Data + AI Summit. “Apache Spark Streaming and Delta Live Tables Accelerates KPMG Clients For Real Time IoT Insights” June 28 2023.
- Developed and executed a successful Databricks Delta Sharing and Unity Catalog implementation to ingest and govern ESG data from S&P Global. Utilized shared data to power the KPMG Sustainable Finance Data Regulation (SFDR) accelerator.
- Implemented a real-time demand analytics and monitoring system for a large electrical transmission organization. Developed a scalable Databricks workflow to ingest data from multiple API endpoints and processed the data using the Databricks medallion architecture with Delta Live Tables and spark streams for efficient and accurate analysis.
- Implemented advanced dashboard solutions using Power BI, Tableau, and Databricks SQL on KPMG's production cluster to enable real-time monitoring and analytics of a variety of data feeds. These dashboards are currently being utilized to serve clients in the healthcare, manufactured goods, and financial services industries.
- Managed architecture for workstreams with Databricks and Microsoft Azure infrastructure using Terraform. Utilized Docker to manage interactions with 7 different Databricks workspaces.

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- Developed customer Terraform provider to manage a private cloud platform in Golang, interacting with over 15 APIs, 10 modules and 5 resources/data sources.

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Julia Vidal
Associate
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Representative clients

- Florida Executive Office of the Governor
- Fannie Mae
- State of Tennessee, TennCare

Education, licenses & certifications

- Bachelors of Fine Arts

Background

Julia is a driven User Experience Designer with experience in user interface and visual design, specializing in creating visually appealing interfaces and comprehensive design systems. Her skills extend to creating wireframes and prototypes, where she rapidly ideates effective solutions. Additionally, Julia is adept at development implementations, helping ensure high-quality execution across digital products. Building strong client relationships and fostering internal collaboration are central to Julia's work; she actively engages with stakeholders to align her solutions with their goals, enhancing the quality and success of her projects.

Professional and industry experience

- State and Local Government: As the lead designer, Julia collaborated with various teams across the project to help ensure alignment on deliverables, progress, and processes. Julia managed the updating and building of new prototype flows, often on short notice, and proactively worked to analyze and overcome challenges, helping ensure a smooth integration of design concepts into the final product. Julia proposed new methodologies and innovative solutions through mockups and presented them to the client as needed. She worked closely with the development team to help ensure the product aligned with both design specifications and client expectations. Additionally, she coached and supervised an additional design resource.
- State and Local Government: Led the design and implementation of a comprehensive product design system, enhancing consistency and driving quality across the platform.
- Loan Servicer: Under the guidance of leadership, collaborated in the envisioning and design of a holistic loan servicing portal, employing design thinking principles to shape our approach. A key part of Julia's role involved identifying and defining critical user roles for the project, helping ensure we met the needs of all stakeholders. Julia contributed to developing the information architecture, experience architecture, and wireframes, which formed the backbone of our design. Additionally, Julia assisted the client in unifying separate applications to create a seamless and cohesive loan servicing user experience. Throughout the project, I played an active role in presenting our vision, helping ensure consistent alignment with leadership to maintain a clear and unified direction.
- Designed products for Fortune 500 companies by researching their brand guidelines and tailoring the designs to help ensure that the user has an enjoyable experience. Collaborated on complex projects involving cross-functional and cross-team stakeholder groups, including business development to implement smooth

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experiences. Drove design executions involving foundational research, concept creation, iteration, and validation.

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Attachment B

Massachusetts Technology Collaborative
Authorized Respondent's Signature and Acceptance Form

The undersigned is a duly authorized representative of the Respondent listed below. The Respondent has read and understands the RFP requirements. The Respondent acknowledges that all of the terms and conditions of the RFP are mandatory, and that Respondent's response is compliant with such requirements.

The Respondent understands that, if selected by the Mass Tech Collaborative, the Respondent and the Mass Tech Collaborative will execute an Agreement specifying the mutual requirements of participation.

Respondent agrees that the entire bid response will remain valid for sixty (60) days from receipt by the Mass Tech Collaborative.

I certify that Respondent is in compliance with all corporate filing requirements and State tax laws.

I certify that the statements made in this response to the RFP, including all attachments and exhibits, are true and correct to the best of my knowledge.

I acknowledge and understand the procedures for handling confidential materials submitted to the Mass Tech Collaborative as set forth in Section 3.1(d); I agree to be bound by those procedures and agree that the Mass Tech Collaborative shall not be liable under any circumstances for the disclosure of any materials submitted to the Mass Tech Collaborative pursuant to this RFP or upon the Respondent's selection.

Respondent:
Rob Breakiron

By:

Name: Rob Breakiron
Title: Managing Director, Advisory
Date: 10/7/2025

Massachusetts Technology Collaborative

Grant Agreement
Standard Budget and Invoice Template
Invoiced Costs

Line Number	Budgeting																			
2	Applicant Information																			
3	Applicant: KPMG, LLP			Procurement No.: 2026-JAII-01																
4	Budget Period: 12/2/2025 - TBD			Title of Proposed Project:																
5	Address: Two Financial Center, 60 South Street, Boston, MA 02111-2602			AI Hub Data Commons Collaborative Consulting Services																
6																				
7																				
8				MTC Funding Requested:																
9				Total Project Cost:	$3,999,629															
10	Cost Elements				Total Project	Invoice 1			Invoice 2			Invoice 3			Invoice 4			Cumulative		
11						Period: 12/2/2025-MM/DD/YYYY			Period: MM/DD/YYYY-MM/DD/YYYY			Period: MM/DD/YYYY-MM/DD/YYYY			Period: MM/DD/YYYY-MM/DD/YYYY			Period: MM/DD/YYYY-MM/DD/YYYY		
12								Amount			Amount			Amount			Amount	Expended		Remaining
13	I. Direct Labor																			
14	*Name/Title*	*HRS*	*Rate*			*HRS*			*HRS*			*HRS*			*HRS*					
15	Bharat Gorantla, Delivery Partner	85	$246		$20,884		$	-		$	-		$	-		$	-	$	-	$ 20,883.65
16	Rob Breakiron, Client Relationship Partner	126	$236		$29,692		$	-		$	-		$	-		$	-	$	-	$ 29,691.90
17	Ashish Ghoda, Engagement Director	610	$235		$143,185		$	-		$	-		$	-		$	-	$	-	$ 143,185.30
18	Rahul Kohli, Cyber Security Subject Matter Professional	106	$353		$205,028		$	-		$	-		$	-		$	-	$	-	$ 205,028.32
19	Ryan McGurgan, Security/Cyber Engineer	710	$293		$142,947		$	-		$	-		$	-		$	-	$	-	$ 142,947.48
20	Venoth, Lai, Security/Cyber Lead	52	$336		$205,028		$	-		$	-		$	-		$	-	$	-	$ 205,028.32
22	Drew Clark, Data/AI Architect	976	$210		$344,103		$	-		$	-		$	-		$	-	$	-	$ 344,102.98
23	Saroj Mahoarty, Project Coordinator, Offshore	2236	$64		$23,108															$ 23,107.70
24	Suresh Chandra, Technical Lead/PMO	976	$210		$205,028															$ 205,028.32
25	MacGregor Winegard, Cloud and Data Engineer	1942	$177		$344,103															$ 344,102.98
26	TBD, Manager	110	$210		$23,108															$ 23,107.70
27	TBD, Senior Associate	288	$177		$51,031															$ 51,030.72
28	TBD, Senior Associate, Offshore	1204	$42		$50,580															$ 50,580.04
29	TBD, Senior Associate, Offshore	1204	$42		$50,580															$ 50,580.04
30	TBD, Associate, Offshore	1739	$36		$61,943															$ 61,943.18
31	TBD, Associate, Offshore	1739	$36		$61,943															$ 61,943.18
32	TBD, Associate, Offshore	1739	$36		$61,943															$ 61,943.18
33	Total Direct Labor				$2,024,235	0	$	-	0	$	-	0	$	-	0	$	-	$	-	$ 2,024,234.99
34																				
35	II. Direct Labor Fringe Cost	Rate (%):			$0		$	-		$	-		$	-		$	-	$	-	$ -
36																				
37	II. Subcontractors/Consultants/Contracted Staffing																			
38	*Firm name/title or role/type of services to be provided*	*HRS*	*Rate*			*HRS*			*HRS*			*HRS*			*HRS*					
39	Subcontractor 1, Business Analyst, Analyzes business needs and processes to propose data-driven solutions that align with organizational goals.	2318	$190		$440,420		$	-		$	-		$	-		$	-	$	-	$ 440,420.00
40	Subcontractor 2, QA/Test Lead, Oversees the testing process to ensure the solution meets quality standards and functions correctly.	2318	$180		$417,240		$	-		$	-		$	-		$	-	$	-	$ 417,240.00
41	Subcontractor 3, Security/Cyber Engineer, Designs and implements security measures to protect data and systems from cyber threats	2135	$250		$533,750		$	-		$	-		$	-		$	-	$	-	$ 533,750.00
42	Subcontractor 4, Python/Data Bricks Engineer, Develops data pipelines and analytics solutions using Python and Databricks to transform and analyze large datasets	2135	$250		$533,750		$	-		$	-		$	-		$	-	$	-	$ 533,750.00
43					$0		$	-		$	-		$	-		$	-	$	-	$ -
44					$0		$	-		$	-		$	-		$	-	$	-	$ -
45	Total Subcontractors/Consultants				$1,925,160	0	$	-	0	$	-	0	$	-	0	$	-	$	-	$ 1,925,160.00
46																				
47	III. Direct Materials (provide description and costs basis)																			
48	Curriculum Development & Training				$0													$0	$0	
49					$0													$0	$0	
50					$0													$0	$0	
51					$0													$0	$0	
52					$0													$0	$0	
53					$0													$0	$0	
54					$0													$0	$0	
55	Total Direct Materials				$0			$0			$0			$0			$0	$0	$0	
56																				
57	IV. Travel				$50,234													$0	$50,234	
58																				
59	V. Other Direct Costs *(list type and description such as venue rental costs and cost basis)*																			
60					$0													$	-	$ -
61					$0													$	-	$ -
62					$0													$	-	$ -
63					$0													$	-	$ -
64					$0													$	-	$ -
65	Total Other Direct Costs				$0		$	-		$	-		$	-		$	-	$	-	$ -
66																				
67	VI. General & Administrative Expense/Overhead	Rate (%):			$0		$	-		$	0		$	0		$	0	$	-	$ 0
68																				
69	**Total PROJECT COSTS**				**$3,999,629**		**$**	**0**		**$**	**0**		**$**	**0**		**$**	**0**	**$**	**0**	**$3,999,629**

LEGEND:

Formula cell
Data entry cell

This section is for post-contract invoicing only. Do not complete with proposal.